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(54) CHANNEL SELECTION METHOD FOR ISDN CHANNEL AND ISDN EXCHANGE SYSTEM TO EXECUTE IT

(57)Abstract:

PROBLEM TO BE SOLVED: To reduce a block rate with respect to a request of H system communication by revising tentatively a B-channel of an H channel common use class into an H channel exclusive class, awaiting the B channel of the H channel exclusive class till it is idle and connecting the H channel when it is idle.

SOLUTION: An extension (i) makes a call to an extension (j) at a communication speed of H1 (1). However, a notice of call reject is received because no idle B channel is available of H1 communication. On the other hand, there is an idle B channel available of 64kbps communication in B channels of an H channel common use class, the H1 channel is reserved and communication is conducted by using the idle B channel (2). While the communication is conducted by using the idle B channel, the idle state of the reserved H1 channel is always monitored and when the reserved H1 channel is tentatively captured, it is informed to a caller station (3). When the reservation is finished, the reserved H1 channel is selected and the communication by using the H1 channel is conducted (4).
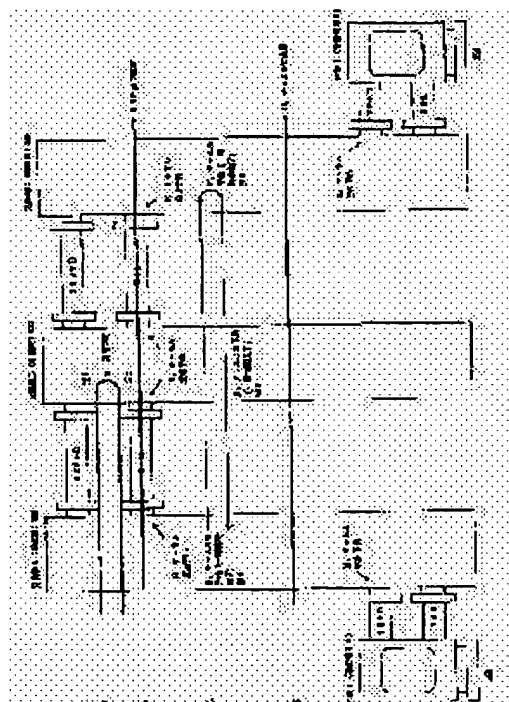
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CLAIMS

[Claim(s)]
[Claim 1] The conditions which made two or more B channels H channel collectively, and were
registered into B channels each to be used as the class only for H channel or a H channel combination
class are followed. In the channel selection approach of the ISDN circuit which enables selection of this
B channel When the H channel connection request is received from an origination side and B channel of
this H channel combination class is using it, B channel of this H channel combination class is
temporarily changed into the class only for H channel. When queuing was performed until B channel
which constitutes this class only for H channel changed into the empty condition, this H channel is
connected with an origination side when B channel which constitutes this class only for H channel
changes into an empty condition, and connection is completed, Or the channel selection approach of the
ISDN circuit characterized by returning the class changed when a communication link was completed
and connection was cut to the original class.
[Claim 2] The conditions which made two or more B channels H channel collectively, and were
registered into B channels each to be used as the class only for H channel or a H channel combination
class are followed. When the H channel connection request is received from a dispatch ISDN terminal,
in the channel selection approach of the ISDN circuit which enables selection of this B channel the
ISDN exchange When B channel required for the H channel connection cannot be secured, don't
perform H channel connection to a dispatch ISDN terminal, A connectable information transfer rate is
notified to this dispatch ISDN terminal. And this dispatch ISDN terminal While performing
retransmission with a connectable information transfer rate, the ISDN exchange which performed the
secured demand of B channel which makes possible the information transfer rate to need, and received
the secured demand of this B channel When B channel which makes possible the demanded information
transfer rate is supervised and B channel changes into an empty condition, this B channel is reserved and
it notifies that the information transfer rate required of this dispatch ISDN terminal became possible.
Subsequently The channel selection approach of the ISDN circuit characterized by switching to the
communication link of a demand information transfer rate by selection of this ISDN terminal.
[Claim 3] The channel selection approach of the ISDN circuit characterized by the ISDN terminal to
which it was notified in claim 2 that B channel of said demand information transfer rate was secured
switching to the communication link of this demand information transfer rate automatically.
[Claim 4] The channel selection approach of the ISDN circuit characterized by opening this secured B
channel when B channel of said demand information transfer rate is secured, time amount until it
switches to the communication link of a demand information transfer rate is supervised and a switch is
not performed in predetermined time amount from from in claim 2.
[Claim 5] The channel selection approach of the ISDN circuit characterized by opening secured
remaining intact B channels when the ISDN terminal to which it was notified in claim 2 that B channel
of said demand information transfer rate was secured carries out a switch demand with an information
transfer rate lower than this demand information transfer rate.
[Claim 6] claim 5 -- setting -- said demand information transfer rate -- H1 a channel -- carrying out -- the

information transfer rate under current communication link -- 64kbps(es) ** -- said information transfer rate lower than this demand information transfer rate when carrying out -- H0 The channel selection approach of the ISDN circuit characterized by being an information transfer rate.

[Claim 7] It sets to claim 6 and is said H0. The channel selection approach of the ISDN circuit characterized by opening when are changed and required with an information transfer rate, and time amount predetermined [B channels] with the secured intact remainder passes.

[Claim 8] It sets to claim 6 and is said H0. The channel selection approach of the ISDN circuit characterized by making it use it for the call of others B channels with the secured intact remainder when changed and required with an information transfer rate.

[Claim 9] The conditions which made two or more B channels H channel collectively, and were registered into B channels each to be used as the class only for H channel or a H channel combination class are followed. Enable selection of this B channel and the dispatch demand by H channel is received from a master station. In the ISDN switching system which notifies the information transfer rate which can send to a master station when B channel of the demanded information transfer rate cannot be secured A demand information-transfer-rate extract means given to the dispatch demand by the first information transfer rate from a master station to ask for the second information transfer rate which can be sent and to need, Catch B channel which was given to this dispatch demand and which is needed for this second information transfer rate from the H channel combination class, and it connects. A channel class modification means to change temporarily continuous B channel required for a demand information transfer rate including this B channel into the class only for H channel, The channel class modification storage section which memorizes having changed, and a reservation dispatch means to perform the dispatch demand by the demand information transfer rate which includes connected B channel for every predetermined time amount in a master station, A channel reservation prehension means to catch temporarily all B channels except this B channel when all B channels of the class only for H channel containing this B channel are able to be caught, When the dispatch demand by the demand information transfer rate in a slave station is attained A reservation dispatch good advice means to notify reservation dispatch good information to a master station, a reservation dispatch improper advice means to notify reservation dispatch improper information to a master station when the dispatch demand by the demand information transfer rate is improper, and when reservation dispatch improper information is received An advice means of demand information-transfer-rate reservation to notify to a master station that that the information transfer rate needed in the master station which received reservation dispatch good information became possible is a reservation channel release means to release B channel caught temporarily, By the channel-switching demand to this second information transfer rate received from the master station from this first information transfer rate A pass control means to return the channel class of B channel caught temporarily to the H channel combination class, and to connect the pass between B channels between a master station and a slave station, The ISDN switching system characterized by having an advice means of channel-switching completion to notify that connection of this pass was completed to this master station.

[Claim 10] The conditions which made two or more B channels H channel collectively, and were registered into B channels each to be used as the class only for H channel or a H channel combination class are followed. In the ISDN terminal connected to the ISDN exchange which enables selection of this B channel A demand information-transfer-rate analysis means to display the information transfer rate in which channel switching is possible when the advice whose information transfer rate needed from this ISDN exchange became possible is received, A channel-switching demand means to identify the existence of a change demand of a channel, An advice means of a channel-switching demand to notify the change demand of a channel to this ISDN exchange, B channel which changes from this ISDN exchange by receiving the advice which channel switching completed, and B channel already used for a communication link are used. The channel-switching control means switched to a new transmission speed from the transmission speed which has already communicated, The ISDN terminal characterized by having an advice means of channel-switching completion to notify the completion of a change of a channel to the exchange when the change demand of a channel is received and channel switching is

completed by this channel-switching control means.

[Claim 11] The ISDN terminal characterized by establishing a channel-switching demand means to notify a channel-switching demand to the exchange when the advice whose information transfer rate further needed from said ISDN exchange became possible in claim 10 is received.

[Claim 12] The ISDN terminal characterized by to have the channel-switching demand allowed time storage section which remembers time amount until a channel-switching demand is performed to be a channel-switching monitor means to require channel switching of the exchange automatically [when the advice whose information transfer rate further needed from said ISDN exchange became possible in claim 10 is received, predetermined allowed time until a channel-switching demand is performed is supervised and time amount is exceeded].

[Claim 13] In case it notifies to a terminal that the information transfer rate which said master station needs further became possible in claim 9 Permit reception of channel switching from this ISDN terminal, and a predetermined time monitor is carried out. A channel-switching monitor means to return the channel class of B channel which released B channel caught temporarily and was memorized in said channel class modification storage section when this predetermined time was exceeded to the H channel combination class, The ISDN switching system characterized by having an advice means of reservation channel release to notify to a destination side that the release request of B channel caught temporarily is the channel-switching allowed time storage section which memorizes this predetermined time that permits reception of channel switching.

[Claim 14] The number of B channels reserved by the exchange in claim 9 after the channel-switching demand from said master station performs channel switching further, Compare the number of B channels demanded by the channel-switching demand, and when an intact channel is in reserved B channel The ISDN switching system characterized by having an intact reservation channel release means to return the channel class of B channel which canceled reservation of intact B channel and was memorized in said channel class modification storage section to the H channel combination class.

[Claim 15] In claim 9, if there is intact reservation B channel after carrying out channel switching by the demand from said master station further Predetermined time until it does not release this B channel but releases B channel which is not used [this] is supervised. An intact channel maintenance monitor means to cancel reservation of B channel which is not used [this] when it becomes the time amount to release, and to return the channel class of B channel for ******** to this channel class modification storage section to the H channel combination class, The ISDN switching system characterized by having the intact channel maintenance allowed time storage section which memorizes time amount until it releases B channel which is not used [this].

[Claim 16] The ISDN terminal characterized by to have a reservation dispatch means to give the dispatch demand by the demand information transfer rate including connected B channel to the exchange, for every predetermined time when the second information transfer rate needed for the dispatch demand by the first information transfer rate which can further send to the exchange is given and sent in claim 10 and connection is completed with this first information transfer rate that can send.

[Claim 17] In claim 10, the second information transfer rate needed for the dispatch demand by the first information transfer rate which can further send to the exchange is given and sent. It sends with the third information transfer rate [low speed / information transfer rate / this / that is needed by new call number / second / when connection is completed with this first information transfer rate that can send]. A reservation dispatch change means to change transmission speed to the call of the third information transfer rate to which connection already completed the call of this first information transfer rate under communication link newly, and to change into the exchange the call which carries out reservation dispatch from a changing agency at a change place when connection is completed, The ISDN terminal characterized by having an advice means of a reservation monitor change to notify to the exchange the demand which continues the reservation monitor of B channel of the call of a changing agency by the new call of a change place when transmission speed is changed.

[Claim 18] In claim 9, give this second information transfer rate needed for the dispatch demand by this first information transfer rate that can further send from a master station, and it is sent. In the condition

of carrying out the reservation monitor of B channel of this second information transfer rate to need With the third information transfer rate [low speed / information transfer rate / this / that is needed by new call number from same master station / second] The ISDN switching system carry out having a reservation monitor change means to receive the advice of a change of a reservation monitor from this master station, and to continue the reservation monitor of B channel of said channel class modification storage section by the new call of a change place when a dispatch demand is received and connection is completed as the description.

[Claim 19] In claim 10, the second information transfer rate needed for the dispatch demand by the first information transfer rate which can further send to the exchange is given and sent. By the reservation executive state of B channel of this second information transfer rate that connection completes with this first information transfer rate that can send, and the exchange and a terminal need The ISDN terminal characterized by having a reservation dispatch discharge means to cancel reservation dispatch at the exchange for every predetermined time, and an advice means of reservation channel monitor discharge to notify the demand which cancels the reservation monitor of B channel to the exchange, by actuation of a terminal.

[Claim 20] The ISDN switching system carried out [having a reservation channel monitor discharge means to return the channel class of B channel which canceled the reservation dispatch for every predetermined time, and was memorized in said channel class modification storage section to the H channel combination class, when the demand which cancels the reservation monitor of B channel of said master station during a reservation monitor further is received in claim 9, and] as the description.

[Claim 21] claim 1 -- setting -- said first information transfer rate -- 64kbps it is -- said second information transfer rate -- H1 it is -- said third information transfer rate -- H0 it is -- the channel selection approach of the ISDN circuit characterized by things.

[Claim 22] claim 9 -- setting -- said first information transfer rate -- 64kbps it is -- said second information transfer rate -- H1 it is -- ISDN switching system characterized by things.

[Claim 23] claim 18 -- setting -- said first information transfer rate -- 64kbps it is -- said second information transfer rate -- H1 it is -- said third information transfer rate -- H0 it is -- ISDN switching system characterized by things.

[Claim 24] claim 16 -- setting -- said first information transfer rate -- 64kbps it is -- said second information transfer rate -- H1 it is -- ISDN terminal characterized by things.

[Claim 25] claim 17 -- setting -- said first information transfer rate -- 64kbps it is -- said second information transfer rate -- H1 it is -- said third information transfer rate -- H0 it is -- ISDN terminal characterized by things.

[Claim 26] The ISDN terminal which gives the dispatch demand by the information transfer rate needed further to the exchange in claim 10, and is characterized by having a retransmission information-transfer-rate setting-out means to set an information transfer rate required for a communication link as a retransmission demand, to the terminal which receives from the exchange the information transfer rate which can send, and carries out a retransmission demand with this information transfer rate when B channel of the demanded information transfer rate cannot be secured.

[Claim 27] The ISDN terminal which gives the dispatch demand by the information transfer rate needed further to the exchange in claim 10, and is characterized by to have a retransmission demand conditioning means set up the requirements of an information transfer rate required for a communication link, and a retransmission requirements storage means memorize the condition, to the terminal which receives from the exchange the information transfer rate which can send, and carries out a retransmission demand with this information transfer rate when B channel of the demanded information transfer rate cannot be secured.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the ISDN exchange and the terminal unit which enforce the connection method and approach of H channel (H0 a channel and H1 channel) in ISDN.
[0002]
[Description of the Prior Art] It sets to ISDN transmission and is 64kbps. Considering this as the configuration of 23 B+D by 23 channels and the data channel D by setting a channel Bases B is carried out.
[0003] Furthermore, six B channels are bundled among 23B, and it is H0. It considers as a channel, 24 B channels are bundled, and it is H1. Considering as a channel is performed. In this case, they are these [H0]. A channel and H1 The channel is called H channel.
[0004] Furthermore, various approaches are developed as the selection approach of this H channel. There is a technique by which the JP,4-144395,A publication was carried out as the one technique. It is H0 for every B channel which constitutes H channel from this technique. An exclusive class or a general communication link (64kbps communication links) class is registered, and it is H0. In a communication link, it is H0. B channel of an exclusive class is caught.
[0005] Moreover, in a general communication link, B channel of a general communication link class is caught, and allowance and the restriction class of a general communication link are registered for every B channel, and it is H0. With this approach of being the approach of making all B channels applicable to prehension in a communication link, and catching from other than B channel of regulation in a general communication link, it is H1. If the class only for communication links is set up, it will become impossible to use it by the communication link of other classes, and the utilization ratio of a circuit will fall. Moreover, it is H1 when the class of the combination with the communication link of other classes is set up. The communicative rate of a block becomes high.
[0006] On the other hand, when all B channels required for the configuration of H channel cannot be secured, the approach of connecting, when B channel needed with a queuing method is able to be secured is taken (for example, JP,5-153674,A).
[0007] By this approach, if B channel which constitutes H channel is used at random, securing continuous B channel to need will take time amount. Moreover, already secured B channel will be applicable also to the communication link by other H channel until B channel needed among other exchanges is securable, even if it is able to secure B channel needed between a certain exchanges, when carrying out a tandem connection.
[0008] It is H1 between a certain exchanges in a network. Two or more H1 when there is nothing a class part opium poppy about a circuit like [although considering making a communication link possible the circuit which makes other general calls possible is generally also secured between this exchange] the technique indicated by above-mentioned JP,4-144395,A It is possible that the circuit which carries out possible [of the communication link] is independently used by the general call. Therefore, H1 Queuing time amount until it realizes a communication link demand increases and carries out.

[0009] This is H0. A communication link call is H1. It is also the same as when the circuit which carries out possible [of the communication link] is being used independently.

[0010] Furthermore, it is possible for a certain extent to be satisfied with the transmission speed of 64kbps(es) of a user's communication link object with an advance of the latest information-compression technique, even if it is pictorial communication.

[0011]

[Problem(s) to be Solved by the Invention] As mentioned above, generally, like [communication link / H system] a telephone or the communication link of FAX, the traffic of general dispatch is high and it is uneconomical in the network which can make H system communication links (H0, H1, etc.) by H channel, and the general dispatch by B channel intermingled, from the point of a deployment of a network facility to prepare the circuit only for H system communication links.

[0012] Therefore, the first object of this invention is H0 which controls the utilization in a network to be able to use a circuit effectively when the demand of H system communication link occurs. A channel and H1 The ISDN exchange and the terminal unit which carry the H channel selection approaches, such as a channel, and this out are offered.

[0013] Furthermore, even if the object of this invention reduces the communication link quality to need temporarily to H system communication link demand, while it secures a communication link demand, it is for offering the ISDN exchange and the terminal unit which carry the H channel selection approach changed to the communication link quality needed when the facility with which can be satisfied of the communication link quality to need is securable, and this out.

[0014] Furthermore, the object of this invention is H0 which reduces useless queuing of H channel in compaction of the queuing time amount of H channel which secures the rate of a block to the demand of H system communication link between reduction and the exchange, and queuing between each exchange to H system communication link demand again. A channel and H1 The ISDN exchange and the terminal unit which carry the H channel selection approaches, such as a channel, and this out are offered.

[0015]

[Means for Solving the Problem] The channel selection approach of the ISDN circuit which attains the technical problem of above-mentioned this invention Two or more B channels are collectively made into H channel so that it may be indicated by claim 1 as a fundamental configuration. In the channel selection approach of the ISDN circuit which enables selection of this B channel according to the conditions registered into B channels each to be used as the class only for H channel, or a H channel combination class When the H channel connection request is received from an origination side and B channel of this H channel combination class is using it, B channel of this H channel combination class is temporarily changed into the class only for H channel. When queuing was performed until B channel which constitutes this class only for H channel changed into the empty condition, this H channel is connected with an origination side when B channel which constitutes this class only for H channel changes into an empty condition, and connection is completed, Or it is characterized by returning the class changed when a communication link was completed and connection was cut to the original class.

[0016] Furthermore, the basic configuration of the ISDN switching system which attains the technical problem of above-mentioned this invention Two or more B channels are collectively made into H channel so that it may be indicated by claim 9. The conditions registered into B channels each to be used as the class only for H channel or a H channel combination class are followed. Enable selection of this B channel and the dispatch demand by H channel is received from a master station. In the ISDN switching system which notifies the information transfer rate which can send to a master station when B channel of the demanded information transfer rate cannot be secured A demand information-transfer-rate extract means given to the dispatch demand by the first information transfer rate from a master station to ask for the second information transfer rate which can be sent and to need, Catch B channel which was given to this dispatch demand and which is needed for this second information transfer rate from the H channel combination class, and it connects. A channel class modification means to change temporarily continuous B channel required for a demand information transfer rate including this B channel into the class only for H channel, The channel class modification storage section which memorizes having

changed, and a reservation dispatch means to perform the dispatch demand by the demand information transfer rate which includes connected B channel for every predetermined time amount in a master station, A channel reservation prehension means to catch temporarily all B channels except this B channel when all B channels of the class only for H channel containing this B channel are able to be caught, When the dispatch demand by the demand information transfer rate in a slave station is attained A reservation dispatch good advice means to notify reservation dispatch good information to a master station, a reservation dispatch improper advice means to notify reservation dispatch improper information to a master station when the dispatch demand by the demand information transfer rate is improper, and when reservation dispatch improper information is received An advice means of demand information-transfer-rate reservation to notify to a master station that that the information transfer rate needed in the master station which received reservation dispatch good information became possible is a reservation channel release means to release B channel caught temporarily, By the channel-switching demand to this second information transfer rate received from the master station from this first information transfer rate The channel class of B channel caught temporarily is returned to the H channel combination class, and it has a pass control means to connect the pass between B channels between a master station and a slave station, and an advice means of channel-switching completion to notify that connection of this pass was completed to this master station.

[0017] Furthermore, the basic configuration of the ISDN terminal which attains the technical problem of above-mentioned this invention The conditions which made two or more B channels H channel collectively, and were registered into B channels each to be used as the class only for H channel or a H channel combination class are followed. In the ISDN terminal connected to the ISDN exchange which enables selection of this B channel A demand information-transfer-rate analysis means to display the information transfer rate in which channel switching is possible when the advice whose information transfer rate needed from this ISDN exchange became possible is received, A channel-switching demand means to identify the existence of a change demand of a channel, An advice means of a channel-switching demand to notify the change demand of a channel to this ISDN exchange, B channel which changes from this ISDN exchange by receiving the advice which channel switching completed, and B channel already used for a communication link are used. The channel-switching control means switched to a new transmission speed from the transmission speed which has already communicated, When the change demand of a channel is received and channel switching is completed by this channel-switching control means, it is characterized by having an advice means of channel-switching completion to notify the completion of a change of a channel to the exchange.

[0018]

[Embodiment of the Invention] According to a drawing, the gestalt of operation of this invention is explained below. In addition, in drawing, a reference number or a reference designator identically same to a similar thing is attached and explained.

[0019] Drawing 1 is an example of a configuration in the case of sending a message to the exchange 350 of extension j connected to the exchange C which lets the exchange B which is a relay center 200 pass from the master station 150 of extension i connected to the exchange A which is the gestalt of 1 operation of this invention and is a master station 100, and is connected to a slave station 300 as for example, a TV board.

[0020] Master stations 150 and 350 have CPU and main memory 130 and 330, respectively, and the communication link of them is attained by carrying out execution control of each part protocol function memorized by the main memory of a common configuration by CPU.

[0021] On the other hand, the configuration of a master station 100, a relay center 200, and a slave station 300 is equal, it has CPU and main memory 110, 210, and 310 like a terminal, and each part protocol function memorized by the main memory of a common configuration is performed by CPU. Each part protocol function memorized by these main memory is explained later.

[0022] Moreover, Exchange A and Exchange B are connected by the circuit 400 between BC which consists of an ISDN circuit of 23 B+D, and an ISDN circuit of 24B. Moreover, Exchange B and Exchange C are connected by the same circuit 500 between BC.

[0023] Exchange A, the master station 150, and Exchange C and a called terminal 300 are connected by the ISDN circuit of 2B+D, and the ISDN circuit of 24B.

[0024] Drawing 2 is drawing which explains the description of this invention by the example to which the message which holds TV board to the called terminal 350 of extension j connected to the exchange C which is a slave station 300 through the exchange B which is a relay center 200 from the master station 150 of extension i connected to the exchange A which is the master station 100 of 1 based on above-mentioned drawing 1 is sent.

[0025] ** to which dispatch is performed [j] withHextension 1 transmission speed from extension i in order for extension i, and extension j to perform a television conference with the transmission speed of H1. However, advice of that empty B channel in which H1 communication link is possible is not in the circuit BC between Exchange B and Exchange C, and it cannot send to it by B channel of the class only for H channel (*1) is received at this time.

[0026] On the other hand, they are 64kbps(es) to B channel of the H channel combination class. There is empty B channel which can communicate and a part for the empty channel between extension i of an origination side 100, the empty channel between Exchanges A and extension of a destination side j, and Exchange C, and empty B channel of the circuit AB between Exchange A and Exchange B to be able to communicate [H1] exists. Therefore, ** which communicates using empty B channel of 64kbps(es) for a general call while reserving H1 channel.

[0027] And Hwhile communicating using empty B channel 1 A channel is reserved and the opening is monitored continuously. H1 of reservation ** which will be notified to master station side 100 if momentary prehension of a channel is performed. Subsequently, H1 reserved as reservation is completed ** by which a switch communication link is performed to a channel.

[0028] Thus, even if it reduces temporarily the communication link quality needed to H system communication link demand by this invention, while securing a communication link demand, it changes to the communication link quality needed when the facility with which can be satisfied of the communication link quality to need is securable.

[0029] Drawing 3 is the configuration of the ISDN exchanges A, B, and C in above-mentioned drawing 1, and is an example block diagram of a configuration which enables operation of the description of this invention of drawing 2. In drawing 3, the ISDN message received by the ISDN protocol control means 100 which controls the D-channel protocol of ISDN between the exchange and the exchange and between the exchange and a terminal is analyzed by the ISDN message analysis means 10.

[0030] This ISDN message analysis means 10 has the following element. When an ISDN message receives a dispatch demand, by namely, the means 11 and ISDN message which extract the information transfer rate needed from a dispatch demand When the advice of a change of a reservation monitor is received, B channel currently supervised by the call of a changing agency By the means 12 and ISDN message which supervise by continuing by the call of a change place When the advice for which reservation dispatch is improper is received, by the means 13 and ISDN message which release B channel which has been memorized in the channel class modification storage section 31, and which was caught temporarily When discharge of a reservation monitor is received, starting of a reservation dispatch means 40 to send for every fixed time amount is canceled. The channel class of B channel memorized for the means 31 by the means 14 and ISDN message which are returned to the H channel combination class When a channel-switching demand is received, the channel class of B channel memorized in the channel class modification storage section 31 is returned to the H channel combination class. By pass control means 15 to connect the pass between B channels which have been memorized in the channel class modification storage section 31 and which were caught temporarily between a master station and a slave station, and the ISDN message When a channel-switching demand is received, the exchange compares the number of B channels demanded by B channel reserved by prehension temporarily, and channel-switching demand. When it is in reserved B channel un-using it, intact B channel is released, and it has a means 16 to return the channel class of this B channel to the H channel combination class.

[0031] 20 is a means to edit an ISDN message and consists of following elements. Namely, when the

dispatch demand by the demand information transfer rate is impossible in the means 21 and slave station which set the information which notifies that reservation dispatch was attained to a master station when the dispatch demand by the demand information transfer rate is possible in a slave station as an ISDN message When the dispatch demand by the demand information transfer rate is possible in the means 22 and slave station which set the information which notifies that reservation dispatch is impossible to a master station as an ISDN message When the pass between a means 23 to set the information which notifies that dispatch by the information transfer rate needed for a master station was attained as an ISDN message, and B channel caught temporarily is connectable between a master station and a slave station, a means 24 to set the information which notifies that connection of this pass was completed to the master station as an ISDN message -- and It has a means 25 to set up the information which notifies release of B channel caught temporarily to a destination side when a channel-switching demand is not received from a terminal in channel-switching reception allowed time at an ISDN message.

[0032] The channel class modification means 30 makes the channel class modification storage section 31 memorize the channel which changed into the class only for H channel the channel class of B channel specified in class modification from the H channel combination class, and changed the class, when class modification in the class only for H channel from the H channel combination class is required.

[0033] Furthermore, when class modification in the H channel combination class from the class only for H channel is required, the channel class modification means 30 changes into the H channel combination class the channel class of B channel specified in class modification from the class only for H channel, and deletes B channel specified in class modification from the channel class modification storage section 31.

[0034] Furthermore, in drawing, 40 is a reservation means to perform a dispatch demand with an information transfer rate including B channel which was defined by the system and which caught B channel temporarily to the channel reservation prehension means 50 for every fixed time amount, and has been connected.

[0035] The above-mentioned channel reservation prehension means 50 will catch temporarily all B channels except connected B channel, if all B channels memorized by the channel class modification storage section 31 including connected B channel can be caught.

[0036] The channel switch monitor means 60 supervises the time amount which permits reception of channel switching from a master station, when the time amount considered as allowance is exceeded, releases B channel caught temporarily and has the function to return the channel class of this caught B channel to the H channel combination class.

[0037] 61 is a means to memorize the time amount which permits reception of channel switching to the channel switch monitor means 60.

[0038] The intact channel maintenance monitor means 70 supervises allowed time until it releases intact B channel among B channels caught temporarily, when the time amount to permit is exceeded, releases B channel caught temporarily and returns the channel class of open B channel to the H channel combination class. 71 is a means to memorize allowed time until it releases intact B channel with the intact channel maintenance monitor means 70.

[0039] 110 is a means to use the channel prehension means 111 and the channel release means 112, and to control prehension and release of B channel. The channel prehension means 111 catches B channel managed with the channel management tool 120 corresponding to a circuit. Moreover, the channel release means 112 releases B channel managed with the channel management tool 120 corresponding to a circuit.

[0040] Drawing 4 is the example of a configuration of the ISDN terminals 150 and 350 in drawing 1, and is the example block diagram of a configuration which can carry out the description of this invention of drawing 2. In drawing 4, 210 is a means to analyze the ISDN message which received with a means 300 to control the D-channel protocol of the exchange and ISDN between terminals. When the advice whose information transfer rate which needs the notified usable information transfer rate by means 211 display on the display of a terminal, and the ISDN message became possible when the advice whose information transfer rate for which the analysis means 210 needs an ISDN message by the ISDN

message became possible is received is received, the advice means 221 of a channel switch demand is started automatically, and it has a means 212 give a channel-switching demand to the exchange.
[0041] A means 220 to edit an ISDN message When requiring the change of a channel of an information transfer rate usable at the exchange, by actuation of a means 221 to set the information which requires channel switching as an ISDN message, and a terminal When the transmission speed of the call under communication link is changed to the rate of a call during a new communication link, by actuation of a means 222 to set the information which requires that the reservation monitor of B channel of a changing agency call should be continued by the new call of a change place as an ISDN message, and a terminal When the reservation monitor of B channel is canceled, by the change demand of the channel from a means 223 and the exchange which sets the information which requires that the reservation monitor of B channel should be canceled as an ISDN message an advice means 224 of the completion of a channel switch to set the information which notifies that the change of a channel was completed when the change of transmission speed is completed as an ISDN message -- and When B channel required for dispatch with the demanded information transfer rate cannot be secured but the information transfer rate which can send is notified, according to retransmission conditions (the existence of retransmission, information transfer rate at the time of retransmission), it has a means 225 to set the transmission speed which carries out a channel monitor demand as an ISDN message.
[0042] When the change and ISDN message of a channel by actuation of a terminal receive the change demand of a channel from the exchange, B channel which changes, and B channel which has already communicated are used for the channel switch control means 230, and it changes it from the transmission speed which has already communicated to a new transmission speed. Moreover, when channel switching is completed by the channel-switching demand from the exchange, the advice means 224 of the completion of a channel switch is started, and it is ****** about advice of channel-switching completion at the exchange.
[0043] 240 supervises allowed time until a channel-switching demand is performed by actuation of a terminal, when the advice whose information transfer rate needed by the ISDN message became possible is received, when it exceeds the time amount to permit, it starts the advice means 221 of a channel switch demand automatically, and it is ****** about a channel-switching demand to the exchange.
[0044] 241 is a means to memorize allowed time until a channel-switching demand is performed by actuation of a terminal.
[0045] 250 is a means to give a dispatch demand to the exchange with an information transfer rate including B channel which was defined at the terminal and which has been connected for every fixed time amount.
[0046] When 260 is a means to analyze actuation of a terminal and actuation which changes a channel is performed When a means 261 to start the advice means 221 of a channel switch demand, and to give a channel-switching demand to the exchange, and actuation which changes the transmission speed of the call under communication link to the rate of a call during a new communication link are performed The call which carries out reservation dispatch is changed from a changing agency to the exchange at a change place (new call). When discharge actuation of a means 262 to perform the demand which changes the call which starts the advice means 222 of a reservation monitor switch, and carries out a reservation monitor to the exchange to a new call, and the reservation dispatch sent to the exchange for every fixed time amount is performed Cancel reservation dispatch at the exchange and the advice means 223 of reservation channel monitor discharge is started. When actuation of a means 263 to require discharge of the reservation monitor of B channel of the exchange, and retransmission conditioning is performed When selection actuation in a means 264 to set retransmission conditions as the storage means 281, and channel-switching mode is performed in retransmission conditions, it has a means 265 to set channel-switching mode as a channel-switching mode storage means.
[0047] 270 is a means to memorize the mode of whether automatic or hand control performs a channel-switching demand to the exchange. 280 is a means to memorize that mode which carries out reservation dispatch or is not carried out. 290 is a means to memorize the transmission speed in the case of carrying

out reservation dispatch, and the existence of a reservation dispatch demand, and 330 is a means to memorize the conditions which carry out retransmission, when it cannot be sent with the demanded information transfer rate.

[0048] 310 is a display means to notify an operator of the condition of a terminal with an alphabetic character or a lamp, and 320 is a means to notify the information to which the operator operated the terminal to a terminal.

[0049] As mentioned above, in this invention, when using two or more B channels (64kbps) of an ISDN circuit as H channel (H0, H1, etc.) collectively, it is aimed at the ISDN exchange which enables selection of B channel according to the conditions registered into the B channels each as the class only for H channel (H0 dedication and H1 dedication), or a combination class (combination with 64kbps call) with H channel.

[0050] While the H channel connection request is received by the ISDN protocol control means 100 from an origination side and B channel of the H channel combination class is using it, when there is a communication link demand of H channel, B channel of the H channel combination class is temporarily changed into the class only for H channel (H0 dedication and H1 dedication).

[0051] Thereby, the dispatch of those other than the H channel connection request can be regulated, and the queuing time amount of H channel secured by the reduction and the exchange of the rate of a block to the demand of H system communication link can be shortened.

[0052] Queuing can be performed until B channel which constitutes the class only for these H channel will be in an empty condition, and the class changed when B channel which constitutes the class only for H channel changes into an empty condition, H channel was connected with an origination side and connection was completed, or when a communication link was completed and connection was cut can be returned to the original class.

[0053] The ISDN exchange 100 which received the H channel connection request from the dispatch ISDN terminal 150 notifies the information transfer rate in which that H channel connection cannot be performed to the dispatch ISDN terminal 150 and connection are possible to a dispatch ISDN terminal, when B channel required for the H channel connection cannot be secured.

[0054] And the dispatch ISDN terminal 150 can perform the secured demand of B channel which makes possible the information transfer rate to need while performing retransmission with a connectable information transfer rate, and the ISDN exchange 100 which received this can secure a communication link demand by considering as a communication link condition with a once connectable information transfer rate.

[0055] When B channel which makes possible the demanded information transfer rate is supervised and B channel changes into an empty condition, this B channel can be reserved, and it can notify having become possible about the information transfer rate required of this dispatch ISDN terminal, and can switch to the communication link of a demand information transfer rate by selection of the ISDN terminal 150.

[0056] In the ISDN exchange 200 moreover, to every [in a master station 100] fixed time amount (modification by the system is possible) When all B channels of the class only for H channel which performs the dispatch demand by the demand information transfer rate including connected B channel, and contains connected B channel are able to be caught By catching temporarily, and notifying reservation dispatch improper information to a master station 100, when the dispatch demand by the demand information transfer rate in a slave station 300 is improper B channel caught temporarily can be released and useless queuing of H channel in queuing between each exchange can be reduced.

[0057] Furthermore, in the ISDN exchange, the monitor of B channel can be ended by actuation of a master station in the executive state of B channel of a demand information transfer rate.

[0058] Furthermore, the ISDN terminal to which it was notified again that B channel of a demand information transfer rate was secured can switch to the communication link of a demand information transfer rate automatically.

[0059] In the ISDN exchange, when B channel of a demand information transfer rate is secured, time amount until it switches to the communication link of a demand information transfer rate is supervised

and a switch is not performed from from in a certain defined time amount (modification of time amount is possible), secured B channel (except for B channel currently used for the present communication link) can be released.

[0060] Moreover, in the ISDN exchange, when the ISDN terminal to which it was notified that B channel of a demand information transfer rate was secured carries out a switch demand with an information transfer rate (it is the information transfer rate of H0 at the time of demand information-transfer-rate =H1, information-transfer-rate =64kbps under present communication link, and **) lower than a demand information transfer rate, secured remaining intact B channels can be released.

[0061] Furthermore, the ISDN terminal to which it was notified in the ISDN exchange that B channel of a demand information transfer rate was secured An information transfer rate lower than a demand information transfer rate (demand information transfer rate = at the time of H1, information-transfer-rate =64kbps under current communication link, and **) H0 When a switch demand is carried out with an information transfer rate, secured remaining intact B channels can be released when a certain defined time amount (modification of time amount is possible) passes.

[0062] Moreover, in the ISDN exchange, when the ISDN terminal to which it was notified that B channel of a demand information transfer rate was secured carries out a switch demand with an information transfer rate (it is the information transfer rate of H0 at the time of demand information-transfer-rate =H1, information-transfer-rate =64kbps under present communication link, and **) lower than a demand information transfer rate, secured remaining intact B channels can be used by other calls (other H0 call etc.).

[0063] Furthermore, the information transfer rate (for example, H1) needed for the dispatch demand by the information transfer rate (for example, 64kbps(es)) which can send to the exchange again is given and sent. [when connection is completed with the information transfer rate (for example, 64kbps(es)) which can send] When it sends at a rate [low speed / information transfer rate / (for example, H1) / which is needed by the new call number] (for example, H0) and connection is completed, by actuation of a terminal Transmission speed can be changed to the call (for example, H0) to which connection already completed the call under communication link (for example, 64kbps(es)) newly, and the reservation monitor of B channel of the call of a changing agency can be continued by the new call of a change place.

[0064] Drawing 5 is an example of a configuration in the case of using dispatch and accepting stations 150 and 350 as a television conference telephone terminal unit further. As an information I/O device, it has the video input/output equipment 1, a loudspeaker 2, and a microphone 3.

[0065] Furthermore, it corresponds to the video input/output equipment 1, and they are the H channel multiplexing section 4 and 64kbps(es) as a video signal processing circuit. The multiplexing section 5 both has the communications control section 43 and the interconnect procedure control section 44 as voice, a codec 42, and the control function section corresponding to the CIF inverter 40, the codec 41 for BITEO signals, a loudspeaker 2, and a microphone 3, and has multiplexing and the demultiplexing section 45 connected with these.

[0066] The switching control section 6 is the H channel multiplexing section 4 or 64kbps(es). The output of the multiplexing section 5 is switched and outputted and it connects with the exchange through the network interface section 7.

[0067] Next, this invention is further explained based on a concrete example. Drawing 6 is drawing explaining the message sequence for carrying out the description of this invention of having explained above-mentioned drawing 2 , and explains the content for every condition.

[When it becomes impossible to communicate according to the transmission speed demanded at the time of dispatch]

a: Dial first the number which sends to extension j, withHmaster station of extension i 1 transmission speed from A.

[0068] b: Exchange A receives the call setup (SETUP) message from extension i (step S1). The number of prehension demand channels of extension i (the number of channels which can be H1 communicated) is determined by the ISDN message analyzor 10. it is alike with the channel prehension means 111 of

the B channel control section 110, and B channel of extension i is caught based on the determined number of prehension demand channels. Moreover, B channel for a general communication link of Circuit AB is caught similarly.

[0069] c: If the demand channel by the side of extension i can be caught, by the ISDN message editing section 20, the exchange A of a master station 100 edits a call setup reception (CALL_PROC) message, and sends it out to extension i (step S2).

[0070] d: If the demand channel by the side of Circuit AB can be caught, Exchange A is the ISDN message editing section 20, edits a SETUP message, and sends it out to Exchange B (step S3).

[0071] e: Exchange B receives a SETUP message from Exchange A, and determines the number of prehension demand channels of Circuit AB (the number of channels which can be H1 communicated) by the ISDN message analyzor 10. B channel of Circuit AB is caught based on the number of prehension demand channels determined by the B channel control section 110. Moreover, B channel of Circuit BC is caught similarly.

[0072] f: If a demand channel can be caught, in the ISDN message editing section 20, Exchange B edits a CALL_PROC message and sends it out to Exchange A (step S4).

[0073] g: Exchange B determines usable transmission speed (64kbps) from the number of empty channels of Circuit BC by the B channel control section 110, when the demand channel by the side of Circuit BC cannot be caught. And in the ISDN message editing section 20, usable transmission speed is set as reason indicated value in a reason display information element as a reason which cannot catch a demand channel at #58 (current utilization improper transfer capacity) and diagnostic information, a cutting (DISC) message is edited, and it sends out to Exchange A (step S5).

[0074] A known call release sequence performs release and release of a call for the channel between Circuits AB henceforth.

[0075] h: Moreover, Exchange A edits a DISC message including the reason display information which received the DISC message from Exchange B, is the ISDN message editing section 20 and was received from Exchange B, send it out to extension i, it edits the advice (REL) message of release, and sends it out to Exchange B (step S6).

[0076] A known release sequence performs release and release of a call for the channel between extension i, and Circuit AB henceforth.

[A communication link reservation demand with the retransmission and need transmission speed in usable transmission speed]

a: According to the conditions memorized by the retransmission condition storage section 330, set usable transmission speed (64kbps) and the transmission speed (H1) needed as a monitor demand of a channel as the transfer capacity information element in a facility information element, and extension i carries out retransmission to a SETUP message (step S7). It seems that an edit format of this facility information element is shown in drawing 9 - drawing 12 .

[0077] That is, drawing 9 is an example of an edit format of a facility information element, and is defined according to an individual by the class of next offer operation (notes 1).

[0078]
A channel monitor demand Advice of the channel-switching completion in a network Channel reservation dispatch A transmission-speed change demand Channel reservation improper advice Advice of the completion of a transmission-speed change The advice which can be channel reserved A different call transmission-speed change demand Channel-switching good advice Advice of the completion of a different call transmission-speed change A channel-switching demand differs from the content of the argument in the above-mentioned offer operation response (notes 2).

[0079] Offer operation serves as the content of the format which contains AKYUMENTO in "a channel monitor demand", "channel-switching good advice", "a channel-switching demand", "advice of channel-switching completion", "a transmission-speed change demand", and "a different call transmission-speed change demand." And as the encoding example of the argument of a ** case is shown in drawing 10 thru/or drawing 12 , drawing 10 is the case where offer operation is "a channel monitor demand" and "channel-switching good advice."

[0080] Furthermore, drawing 11 is the encoding example of an argument in case offer operation is "a channel-switching demand", "advice of channel-switching completion", and "a transmission-speed change demand."

[0081] Moreover, drawing 12 is the case where offer operation is "a different call transmission-speed change demand." Continuation directions (notes 3) are coded in drawing 12 by those without continuation (0), and those with continuation (1).

[0082] b: Give return explanation at drawing 6 . Exchange A receives the SETUP message from extension i (step S7), and the number of B channels corresponding to usable transmission speed (64kbps) is determined by the ISDN message analyzor 10, and when the transmission speed which transmission speed is 64kbps(es) and needs as a monitor demand of a channel needs H channel, it determines to catch B channel used for this communication link from the H channel combination class.

[0083] B channel of extension i is caught from B channel of the H channel combination class by the B channel control section 110. Moreover, B channel of Circuit AB is similarly caught from B channel of the H channel combination class.

[0084] The ISDN message analyzor 10 extracts an information transfer rate from the transfer capacity information element in a facility information element. The required number of B channels (H1) is determined. Furthermore, in the channel class modification section 30 Caught B channel is included about each by the side of extension i, and Circuit AB. The class of B channel which only the part which performs H1 communication link followed is changed into the class only for H channel from the H channel combination class. A reservation dispatch important point is set as setting out of B channel which changed the class into the channel class modification storage section 31, and the reservation dispatch necessity area of the channel class modification storage section 31.

[0085] c: If the demand channel by the side of extension i can be caught, in the ISDN message editing section 20, Exchange A edits a CALL_PROC message and sends it out to extension i (step S8).

[0086] d: If the demand channel by the side of Circuit AB can be caught, in the ISDN message editing section 20, Exchange A edits into a SETUP message the transmission speed (H1) needed as a channel monitor demand like the SETUP message which received from extension i, and sends it out to Exchange B (step S9).

[0087] e: Exchange B receives the SETUP message from Exchange A, determines the number of B channels corresponding to usable transmission speed (64kbps) by the ISDN message analyzor 10, and catches B channel of Circuit AB from B channel of the H channel combination class by the B channel control section 110.

[0088] Moreover, B channel of Circuit BC is similarly caught from B channel of the H channel combination class.

[0089] An information transfer rate is extracted from the transfer capacity information element in a facility information element (refer to drawing 10) by the ISDN message analyzor 10. The required number of B channels (H1) is determined. In the channel class modification section 30 B channel which changed the class of B channel which only the part which performs the H1 communication links including caught B channel about each by the side of Circuit AB and Circuit BC followed into the class only for H channel from the H channel combination class, and changed the class into the channel class modification storage section 31 is memorized.

[0090] f: If the demand channel by the side of Circuit AB can be caught, Exchange B edits a CALL_PROC message in the ISDN message editing section 20, and sends it out to Exchange A (step S10).

[0091] g: If the demand channel by the side of Circuit BC can be caught, in the ISDN message editing section 20, Exchange B edits into a SETUP message the transmission speed (H1) needed as a channel monitor demand like the SETUP message which received from Exchange A, and sends it out to Exchange C (step S11).

[0092] h: Exchange C receives the SETUP message from Exchange B, determines the number of B channels corresponding to usable transmission speed (64kbps) by the ISDN message analyzor 10, and catches B channel of Circuit BC from B channel of the H channel combination class by the B channel

control section 110.

[0093] Moreover, B channel of extension j is similarly caught from B channel of the H channel combination class.

[0094] Extract an information transfer rate from the transfer capacity information element in a facility information element by the ISDN message analyzor 10, and the required number of B channels (H1) is determined. In the channel class modification section 30, about each by the side of Circuit BC and extension j B channel which changed the classes of B channel which only the part which performs H1 communication link followed including caught B channel into the class only for H channel from the H channel combination class, and changed the class into the channel class modification storage section 31 is memorized.

[0095] i: If the demand channel by the side of Circuit BC can be caught, Exchange C edits a CALL_PROC message in the ISDN message editing section 20, and sends it out to Exchange B (step S12).

[0096] j: If Exchange C can catch the demand channel by the side of extension j, carry out SETUP message editing of it to extension j, in the ISDN message editing section 20, and send it out to extension j.

[0097] k: With a known call offering procedure, a response (CONN) message is received from extension j, and extension i, and extension j will be in a condition during a communication link via Exchanges A, B, and C henceforth (step S13).

[The monitor and prehension] of a channel in which the channel carried out empty monitor reservation a: The reservation dispatch section 40 is started for every fixed time amount by Exchange A, and if the reservation dispatch necessity area of the channel class modification storage section 31 by the side of extension i, and Circuit AB is a reservation dispatch important point, in B channel memorized by this storage section, temporary reservation prehension will be performed for each B channel by the B channel control section 110 except for already caught B channel.

[0098] When B channel of extension i, and Circuit AB is able to be caught, channel reservation dispatch is edited into the facility information element of a facility (FAC) message in the ISDN message editing section 20, and it sends out to Exchange B (step S14).

[0099] b: Exchange B received the FAC message from Exchange A, and has already caught it in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit AB and Circuit BC -- remove B channels and perform temporary reservation prehension for each B channel by the B channel control section 110.

[0100] When B channel of Circuit AB and Circuit BC is able to be caught, in the ISDN message editing section 20, channel reservation dispatch is edited into the facility information element of a FAC message, and it sends out to Exchange C (step S15).

[0101] c: Exchange C received the FAC message from Exchange B, and has already caught it in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit BC and extension j -- remove B channels and perform temporary reservation prehension for each B channel by the B channel control section 110.

[0102] When B channel of Circuit BC and extension j cannot be caught, a channel reservation failure is edited into the facility information element of a FAC message in the ISDN message editing section 20, and it sends out to Exchange B (step S16).

[0103] d: Exchange B receives the FAC message from Exchange C, analyzes a receiving content by the ISDN message analyzor 10, and if channel reservation is improper, it will release B channel [finishing / reservation prehension] in B channel memorized by the channel class modification storage section 31 by the B channel control section 110.

[0104] Moreover, a channel reservation failure is edited into the facility information element of a FAC message in the ISDN message editing section 20, and it sends out to Exchange A (step S17).

[0105] e: Exchange A receives the FAC message from Exchange B, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is improper, will be memorized by the channel class modification storage section 31 by the B channel control section 110, and will release B channel

[finishing / reservation prehension] in B channel.

[0106] f: With the following period, when the reservation dispatch section 40 is started, the procedure of above-mentioned a-b performs channel reservation dispatch, and when B channel of Circuit BC and extension j is able to be caught in Exchange C, edit channel reservation **** into the facility information element of a FAC message in the ISDN message editing section 20, and send out to Exchange B (step S18).

[0107] g: Exchange B receives the FAC message from Exchange C, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is possible, edits channel reservation **** into the facility information element of a FAC message in the ISDN message editing section 20, and sends it out to Exchange A (step S19).

[0108] h: Exchange A receives the FAC message from Exchange B, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is possible, edits the information transfer rate (H1) which became usable and to need into the transfer capacity information element in the facility information element of a FAC message in the ISDN message editing section 20 as advice in which channel switching is possible, and sends it out to extension i (step S20).

[A channel change to a reservation channel]

a: Extension i receives a FAC message from Exchange A, by the ISDN message analyzor 210, it extracts an usable information transfer rate (H1) from the transfer capacity information element in a facility information element, sets an information transfer rate as the terminal status-display section 310, displays an usable information transfer rate on the display of a terminal, and is taken as a channel-switching wait operation condition.

[0109] Channel-switching actuation of an operator is notified to the terminal-handling analyzor 260 from the advice section 320 of terminal-handling information, it recognizes the channel-switching demand from an operator, edits B channel which requires a change of a channel identifier information element as the information transfer rate which requires a change of the transfer capacity information element in the facility information element of a FAC message as a change demand of a channel in the ISDN message editing section 220, and sends it out to Exchange A (step S21).

[0110] b: Return the channel class of B channel which Exchange A received the FAC message from extension i, connected the pass of B channel by the side of extension i by which reservation prehension was carried out temporarily, and Circuit AB memorized by the channel class modification storage section 31 by the ISDN message analyzor 10, and connected pass in the channel class modification section 31 to the H channel combination class.

[0111] Moreover, the same information as the FAC message which received from extension i, in the ISDN message editing section 20 is edited into a FAC message, and it sends out to Exchange B (step S22).

[0112] c: Return the channel class of B channel which Exchange B received the FAC message from Exchange A, connected the pass of B channel by the side of the circuit AB by which reservation prehension was carried out temporarily, and Circuit BC memorized by the channel class modification storage section 31 by the ISDN message analyzor 10, and connected pass in the channel class modification section 31 to the H channel combination class.

[0113] Moreover, the same information as the FAC message which received from Exchange A in the ISDN message editing section 20 is edited into a FAC message, and it sends out to Exchange C (step S23).

[0114] d: Return the channel class of B channel which Exchange C received the FAC message from Exchange B, connected the pass of B channel by the side of the circuit BC by which reservation prehension was carried out temporarily, and extension j memorized by the channel class modification storage section 31 by the ISDN message analyzor 10, and connected pass in the channel class modification section 30 to the H channel combination class.

[0115] Moreover, in the ISDN message editing section 20, as advice which the change of the channel in a network completed, the channel-switching completion in a network is edited into the facility information element of a FAC message (refer to drawing 9), and it sends out to Exchange B (step S24).

[0116] e: Exchange B receives the FAC message from Exchange C, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange C, and sends it out to Exchange A (step S25).

[0117] f: Exchange A receives the FAC message from Exchange B, edits the transmission speed (H1) which changed to the transfer capacity information element in the facility information element of a FAC message, the B channel number which carries out channel switching to a channel identifier information element, and advice of the channel-switching completion in a network as advice which channel switching in a network completed in the ISDN message editing section 20, and sends them out to extension i (step S26).

[0118] g: Extension i receives the FAC message from Exchange A, by the channel-switching control section 230, it extracts a transfer capacity information element and a channel identifier information element from a facility information element, sets the information transfer rate of a transfer capacity information element as the terminal status-display section 310, displays an usable information transfer rate (H1) on the display of a terminal, and is taken as a channel-switching wait operation condition.

[0119] Channel-switching actuation of an operator is notified to the terminal-handling analyzor 260 from the advice section 320 of terminal-handling information. The channel-switching demand from an operator is recognized. In the ISDN message editing section 220 The information transfer rate which changes to the transfer capacity information element in the facility information element of a FAC message in order to require a transmission-speed change from extension j (H1), The B channel number which requires a change, and a transmission-speed change demand are edited into a channel identifier information element, and it sends out to Exchange A (step S27).

[0120] h: Exchange A receives the FAC message from extension i, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from extension i, and sends it out to Exchange B (step S28).

[0121] i: Exchange B receives the FAC message from Exchange A, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange A, and sends it out to Exchange C (step S29).

[0122] j: In order that Exchange C may receive the FAC message from Exchange B and may require a transmission-speed change from extension j, in the ISDN message editing section 20, it edits the B channel number which requires the changes including B channel which has already communicated the information transfer rate (H1) which can communicate to the transfer capacity information element in the facility information element of a FAC message to the channel identifier information element, and sends it out to extension j (step S30).

[0123] k: Extension j receives the FAC message from Exchange C, by the ISDN message analyzor 210, extracts a transfer capacity information element and a channel identifier information element from a facility information element, and sets the information transfer rate of a transfer capacity information element as the terminal status-display section 310. An usable information transfer rate (H1) is displayed on the display of a terminal, and the pass between voice, 64Kbps multiplexing section 352 which multiplexes an image, and B channel already used by communication link is released to 64kbps(es) in the switching control section 351 by the channel-switching control section 230. And the pass between B channels notified to H1 from B channel and Exchange C which have already been used by the communication link with voice and the H channel multiplexing section 353 which has multiplexed the image is connected, and the condition of a terminal is made into a communication link synchronous establishment waiting state.

[0124] Moreover, in the ISDN message editing section 220, as advice which the change of transmission speed completed, the completion of a transmission-speed change is edited into the facility information element of a FAC message, and it sends out to Exchange C (step S31).

[0125] l: Exchange C receives the FAC message from extension j, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from extension j, and sends it out to Exchange B (step S32).

[0126] m: Exchange B receives the FAC message from Exchange C, edits the FAC message of the

information same in the ISDN message editing section 20 as the FAC message from Exchange C, and sends it out to Exchange A (step S33).

[0127] n: Exchange A receives the FAC message from Exchange B, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange B, and sends it out to extension i (step S34).

[0128] o: Extension i receives the FAC message from Exchange A, is the channel-switching control section 230, and releases the pass between B channels already used for 64kbps(es) in the switching control section 151 by the communication link with voice and 64Kbps multiplexing section 152 which multiplexes an image. Subsequently, the pass between B channels notified to H1 from B channel and Exchange A which have already been used by the communication link with voice and the H channel multiplexing section 153 which has multiplexed the image is connected.

[0129] p: According to the data communication procedure between known terminals, make a communication link synchronization establish between extension i, and extension j, and perform the data transmission and reception between extension i, and extension j henceforth (step S35).

[0130] Here, the legend about the notation used in drawing 6 is as follows.

[0131] **: Circuit prehension improper ** between exchange B-C: It is the existence check (all channels are vacant, and it catches at the time, and reserves temporarily) of a modification *:opening channel to the class only for H channel.

- : -- the ** side of open ◇ prehension channel of momentary prehension -- wearing -- near pass setting out and the H channel combination class -- modification DISC**: -- the retransmission after the speed conversion accompanied by an advice SETUP**:channel monitor for the channel prehension failure for transmission speed (64K)

FAC**: Channel reservation dispatch (the check of an empty channel, and momentary reservation)

FAC**: Channel reservation response (channel reservation improper advice)

FAC**: Channel reservation response (channel reservation good advice)

FAC**: Channel-switching possible advice (an usable information transmission rate and usable B channel are notified)

FAC**: Channel-switching demand (the information transmission rate and B channel to be used are notified)

FAC**: Advice FAC[of the channel-switching completion in a network] **: Advice of the channel-switching completion in a network (the information transfer rate and B channel which were changed are notified)

FAC10: Transmission-speed change demand FAC11: Transmission-speed change demand (the information transfer rate and B channel to change are notified)

FAC12: When the advice which can change a channel is received from Exchange A on extension i, with reference to the advice of the completion of a transmission-speed change [change demand processing of the automatic channel of extension i] next drawing 1, and drawing 6, extension i explains the example which performs the change demand of a channel automatically.

[0132] a: When the operator of extension i chooses channel-switching mode, modification actuation in an operator's channel-switching mode is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. An operator's change mode change is recognized, channel-switching mode is read from the channel-switching mode storage section 270, when channel-switching mode is manual change mode, automatic change mode is set as the channel-switching mode storage section 270, and, in the case of automatic change mode, manual change mode is set up at the channel-switching mode storage section 270. The channel-switching mode simultaneously set as the display of a terminal is displayed.

[0133] b: Extension i receives a FAC message including the channel-switching possible advice to which the information transfer rate which can be changed to the transfer capacity information element in a facility information element was set from Exchange A, is the ISDN message analyzor 210, extracts the information transfer rate which can be changed from the transfer capacity information element in a facility information element, and sets the transmission speed which can be changed as the terminal

status-display section 310.

[0134] c: The ISDN message analyzor 210 extracts channel-switching mode from the channel-switching mode storage section 270. and when change mode is automatic channel switching, the information transfer rate which comes out ISDN message editing section 220, and requires a change of the transfer capacity information element in the facility information element of a FAC message as a change demand of a channel, and the B channel number which requires a change of a channel identifier information element are edited, and it sends out to Exchange A.

[0135] d: Perform channel switching henceforth like the procedure after b: of the above-mentioned [a channel change to a reservation channel] term.

[Change demand processing of the automatic channel after fixed time amount progress] When the advice which can change a channel is similarly received from Exchange A on extension i, with reference to drawing 1 and drawing 6 again, even if extension i does not perform change actuation, it explains the example which performs the change demand of a channel after passing fixed time amount.

[0136] a: When the operator of extension i chooses channel-switching mode, modification actuation in an operator's channel-switching mode is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. An operator's change mode change is recognized, channel-switching mode is read from the channel-switching mode storage section 270, when channel-switching mode is manual change mode, automatic change mode is set as the channel-switching mode storage section 270, and, in the case of automatic change mode, manual change mode is set up at the channel-switching mode storage section 270. The channel-switching mode simultaneously set as the display of a terminal is displayed.

[0137] b: Extension i receives a FAC message including the channel-switching possible advice to which the information transfer rate which can be changed to the transfer capacity information element in a facility information element was set from Exchange A. And the information transfer rate which can be changed from the transfer capacity information element in a facility information element by the ISDN message analyzor 210 is extracted, and the transmission speed which can be changed is set as the terminal status-display section 310.

[0138] c: The ISDN message analyzor 210 extracts channel-switching mode from the channel-switching mode storage section 270. And when change mode is manual channel switching, allowed time until channel switching is performed by actuation of extension i is extracted from the monitor allowed time storage area of the Management Department 241 between channel-switching demands, and it is set as the time amount storage area for a monitor of the Management Department 241 between channel-switching demands.

[0139] d: The channel-switching Monitoring Department 240 of extension i subtracts the time amount set as the time amount storage area for a monitor of the Management Department 241 between channel-switching demands for every second. When a subtraction result is set to "0", the information transfer rate which requires a change of the transfer capacity information element in the facility information element of a FAC message as a change demand of a channel, and the B channel number which requires a change of a channel identifier information element are edited from the ISDN message editing section 220, and it sends out to Exchange A.

[0140] e: Perform channel switching henceforth like the procedure after b: of the above-mentioned [a channel change to a reservation channel] term.

[Reservation discharge processing (1) of a channel in case channel switching is not performed from extension i] When advice which can change a channel is performed on extension i, from Exchange A in drawing 1, they are 64kbps(es) at extension i, and extension j again. When the change of a channel is not performed by the channel from extension i, during a call, the example of which reservation of a channel is canceled is explained. Reservation discharge of a channel is explained below to be message sequence ** of drawing 7.

[0141] a: Perform advice which can change a channel on extension i, from Exchange A (step S40). When carrying out this advice, time amount until it changes the channel beforehand registered into the system by the ISDN message editing section 20 is extracted from the channel-switching allowed time

storage section 61. This is set as the channel class modification storage section 31.

[0142] b: The channel-switching Monitoring Department 60 of Exchange A returns the channel class of B channel memorized by the channel class modification storage section 31 to the H channel combination class by the channel class modification section 30, when the time amount set as the channel class modification storage section 31 for every second is subtracted and a subtraction result is set to "0" (step S41). Subsequently, only B channel reserved in the B channel concerned by the B channel control section 110 is released.

[0143] c: At this time, as advice of release of reserved B channel, Exchange A edits a reservation channel release request into the facility information element of a FAC message, and sends it out to Exchange B by the ISDN message editing section 20 (step S42).

[0144] d: Exchange B receives the FAC message from Exchange A. Subsequently, the channel class of B channel memorized by the channel class modification storage section 31 by the channel class modification section 30 is returned to the H channel combination class. And it releases except B channel currently used by communication link in the B channel concerned by the B channel control section 110.

[0145] e: As advice of release of B channel reserved by the ISDN message editing section 20, Exchange B edits a reservation channel release request into the facility information element of a FAC message, and sends it out to Exchange C (step S43).

[0146] f: Exchange C receives the FAC message from Exchange B, and returns the channel class of B channel memorized by the channel class modification storage section 31 by the channel class modification section 30 to the H channel combination class. And it releases except B channel currently used by communication link in this B channel by the B channel control section 110.

[0147] In addition, the legend about the notation used in drawing 7 corresponding to the above-mentioned sequence explanation is as follows.

[0148] ** : supervise an empty channel and it is open FAC**:channel reservation dispatch (the check of an empty channel, and momentary reservation) of a reservation channel temporarily [of momentary reservation of a channel / completion *:].

FAC**: Channel reservation response (channel reservation good advice)

FAC**: Channel switchable advice (an usable information transfer rate and usable B channel are notified)

FAC**: When there are few B channels demanded by the channel-switching demand than the number of B channels which has reserved reservation of advice of reservation channel disconnection [non-used B channel by Exchange A in discharge processing] next drawing 1 , and drawing 6 when Exchange A receives the change demand of a channel from extension i, explain the example of which reservation of intact B channel is canceled.

[0149] a: Exchange A receives the information transfer rate which requires a change of the transfer capacity information element in a facility information element, and the FAC message which contained in the channel identifier information element the B channel number which requires a change as a channel-switching demand from extension i (step S27).

[0150] In the ISDN message analysis 10, pass connection of B channel which extracted and reserved the demand channel number is made from the channel identifier information element in a facility information element. The number of B channels demanded by the number of B channels which this has reserved by Exchange A, and the channel-switching demand is compared.

[0151] When intact B channel is in reserved B channel, the channel class of intact B channel is returned to the H channel combination class with the channel class modification means 30, and intact B channel is simultaneously released by the B channel control section 110.

[0152] b: Release intact reservation B channel like [Exchange B and Exchange C] Exchange A. [Reservation discharge processing (2) of a channel in case channel switching is not performed from extension i] The example which cancels reservation of a channel of above-mentioned extension i, in channel switching in the case of becoming the same conditions as reservation discharge processing (1) of a channel in case channel switching is not performed is explained.

[0153] a: Exchange A receives the information transfer rate which requires a change of the transfer

capacity information element in a facility information element, and the FAC message which contained in the channel identifier information element the B channel number which requires a change as a channel-switching demand from extension i (step S27).

[0154] A demand channel number is extracted from the channel identifier information element in a facility information element by the ISDN message analysis 10, and pass connection of reserved B channel is made. The number of B channels demanded by the number of B channels reserved by Exchange A and the channel-switching demand is compared. Consequently, when intact B channel is in reserved B channel, the time amount beforehand registered into the system until it releases intact reservation B channel is extracted from the intact channel maintenance allowed time storage section 71. And it is set as the channel class modification storage section 31.

[0155] b: The intact channel maintenance Monitoring Department 70 of Exchange A subtracts the time amount set as the channel class modification storage section 31 for every second. When a subtraction result is set to "0", the channel class of intact B channel is returned to the H channel combination class by the channel class modification section 30. Subsequently, B channel intact at the B channel control section 110 is released.

[0156] C: Release intact reservation B channel like [Exchange B and Exchange C] Exchange A. [Reservation dispatch processing in which reservation of reservation B channel is required] When the CONN message which the connection by 64kbps(es) completed from Exchange A is received, an example is explained about the processing which performs reservation dispatch which requires reservation of reservation B channel of Exchange A for every fixed time amount from extension i.

[0157] a: When the operator of extension i chooses reservation dispatch mode, modification actuation in an operator's reservation dispatch mode is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. An operator's reservation dispatch mode change is recognized and reservation dispatch mode is read from the reservation dispatch mode storage section 280.

[0158] In having no reservation dispatch of reservation dispatch mode, it sets those with reservation dispatch as the reservation dispatch mode storage section 280. In with reservation dispatch, those without reservation dispatch are set up at the reservation dispatch mode storage section 280. Moreover, the reservation dispatch mode set as the display of a terminal is displayed.

[0159] b: Extension i edits into the transfer capacity information element in a facility information element the transmission speed (H1) needed for a SETUP message as a monitor demand of usable transmission speed (64kbps) and a channel by the ISDN message editing section 220. and if the reservation dispatch mode of the reservation dispatch mode storage section 280 is with reservation dispatch when it sends out to Exchange A, the transmission speed to need will be boiled and set as the rate storage area of the reservation dispatch information storage section 290.

[0160] c: Extension i receives a CONN message from Exchange A. By the ISDN message analyzor 210, if the reservation dispatch mode of the reservation dispatch mode storage section 280 is with reservation dispatch, a reservation dispatch demand will be set as the reservation dispatch demand area of the reservation dispatch information storage section 290.

[0161] d: The reservation dispatch control section 250 of extension i is started for every fixed time amount, and extracts the reservation dispatch demand area of the reservation dispatch information storage section 290. If the content of reservation dispatch demand area is a reservation dispatch demand, channel reservation dispatch is edited into the facility information element of a FAC message in the ISDN message editing section 220, and it sends out to Exchange A.

[0162] e: Exchange A receives the FAC message from extension i. it has already caught about B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of extension i, and Circuit AB -- B channels are removed and temporary reservation prehension is performed for each B channel by the B channel control section 110. Reservation dispatch needlessness is set as the reservation dispatch necessity area of the channel class modification storage section 31.

[0163] When B channel of extension i, and Circuit AB is able to be caught, by the ISDN message editing section 20, channel reservation dispatch is edited into the facility information element of a FAC

message, and it sends out to Exchange B (step S14).

[0164] f: Exchange B receives a FAC message from Exchange A. In B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit AB and Circuit BC, temporary prehension is performed for each B channel by the B channel control section 110 except for already caught B channel.

[0165] When B channel of Circuit AB and Circuit BC is able to be caught, channel reservation dispatch is edited into the facility information element of a FAC message in the ISDN message editing section 20, and it sends out to Exchange C (step S15).

g: Exchange C receives a FAC message from Exchange B. In B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit BC and extension j, temporary prehension is performed for each B channel by the B channel control section 110 except for already caught B channel.

[0166] When B channel of Circuit AB and extension j is able to be caught, channel reservation **** is edited into the facility information element of a FAC message in the ISDN message editing section 20, and it sends out to Exchange B (step S18).

h: Exchange B receives the FAC message from Exchange C, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is possible, edits channel reservation **** into the facility information element of a FAC message in the ISDN message editing section 20, and sends it out to Exchange A (step S19).

[0167] i: Exchange A receives the FAC message from Exchange B, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is possible, edits the information transfer rate which became usable and to need into the transfer capacity information element in the facility information element of a FAC message in the ISDN message editing section 20 as advice in which channel switching is possible, and sends it out to extension i (step S20).

[Processing of which reservation of H1 communication link is canceled from extension i] Below, extension i is during the communication link by 64kbps(es), and explains the example which cancels reservation of H1 communication link of extension i in the reservation executive state of B channel of H one-copy credit.

[0168] a: When the operator of extension i operates reservation dispatch discharge, actuation of reservation dispatch discharge of an operator is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. Reservation dispatch discharge of an operator is recognized, advice of reservation channel discharge is edited into the facility information element of a FAC message in the ISDN message editing section 220, and it sends out to Exchange A.

[0169] b: Exchange A receives the FAC message from extension i, and judges whether it is a reservation seized condition temporary except B channel already used by the communication link in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of extension i, and Circuit AB. If it is a reservation seized condition, this B channel will be canceled by the B channel control section 110, and the channel class of all B channels memorized by the channel class modification storage section 31 in the channel class modification section 30 will be returned to the H channel combination class.

[0170] Moreover, in the ISDN message editing section 20, advice of reservation channel discharge is edited into the facility information element of a FAC message, and it sends out to Exchange B.

[0171] c: Exchange B receives the FAC message from Exchange A, and judges whether it is a reservation seized condition temporary except B channel already used by the communication link in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit AB and Circuit BC. If it is a reservation seized condition, the B channel concerned will be canceled by the B channel control section 110, and the channel class of all B channels memorized by the channel class modification storage section 31 in the channel class modification section 30 will be returned to the H channel combination class.

[0172] Moreover, in the ISDN message editing section 20, advice of reservation channel discharge is edited into the facility information element of a FAC message, and it sends out to Exchange C.

[0173] d: Exchange C receives the FAC message from Exchange B, and judges whether it is a reservation seized condition temporary except B channel already used by the communication link in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit AB and extension j. If it is a reservation seized condition, this B channel will be canceled by the B channel control section 110. The channel class of all B channels memorized by the channel class modification storage section 31 in the channel class modification section 30 is returned to the H channel combination class.

[Processing which changes the call of 64kbps to the transmission speed of H0 call by actuation from extension i] Extension i is during the communication link by 64kbps(es). H1 In the reservation executive state of B channel for a communication link, the call has been held during the communication link by 64kbps(es) from extension i. other calls -- H0 B channel by which it sent and the call changed the channel class into the class only for H channel during the communication link by 64kbps(es) -- using it -- under a communication link -- a condition -- ** -- the case where it becomes -- the actuation from extension i -- the call of 64kbps -- H0 The example changed to the transmission speed of a call is explained.

[0174] In accordance with the message sequence of drawing 8 , the change of this transmission speed is explained below.

[0175] a: When modification actuation of the transmission speed of a call in which the operators of extension i differed is performed, transmission-speed modification actuation of a call in which operators differed is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. The change request of the transmission speed of the call from which the operator differed is recognized, and in order to perform the transmission-speed change request to a call which is different at the exchange, the call number of the 64Kbps communication link call which is communicating previously in the ISDN message editing section 220 is set as the facility information element of a FAC message.

[0176] Furthermore, continuation is set as the reservation monitor continuation directions which continue the reservation monitor of a changing agency call (64Kbps communication link call) in a change place call (H0 communication-link call). This edits a different call transmission-speed change demand, and it sends out to Exchange A (step S50).

[0177] b: Exchange A receives a FAC message from extension i. By the ISDN message analyzor 10, reservation monitor directions are extracted from the facility information element in a FAC message. They are all B channels and reservation dispatch necessity which extract a call number from a facility information element, and are memorized by this channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) when a reservation monitor is continuation H0 It is set as the channel class modification storage section 31 corresponding to the communication link call to depend. And all B channels of the channel class modification storage section 31 concerned corresponding to a call number (communication link call by 64kbps) are deleted.

[0178] Moreover, in the ISDN message editing section 20, the same information as the FAC message which received from extension i is edited into a FAC message, and it sends out to Exchange B (step S51).

[0179] c: Exchange B receives a FAC message from Exchange A, and extracts reservation monitor directions from the facility information element in a FAC message by the ISDN message analyzor 10. When a reservation monitor is continuation, a call number is extracted from a facility information element. They are all B channels and reservation dispatch necessity which are memorized by the channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) H0 It is set as the channel class modification storage section 31 corresponding to the communication link call to depend. All B channels of this channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) are deleted.

[0180] Moreover, in the ISDN message editing section 20, the same information as the FAC message which received from Exchange A is edited into a FAC message, and it sends out to Exchange C (step S52).

[0181] d: Exchange C receives a FAC message from Exchange B, and extracts reservation monitor directions from the facility information element in a FAC message by the ISDN message analyzor 10. They are all B channels and reservation dispatch necessity which extract a call number from a facility information element, and are memorized by this channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) when a reservation monitor is continuation H0 It is set as the channel class modification storage section 31 corresponding to the communication link call to depend. Subsequently, all B channels of this channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) are deleted.

[0182] Moreover, in the ISDN message editing section 20, the same information as the FAC message which received from Exchange B is edited into a FAC message, and it sends out to extension j (step S53).

[0183] e: Extension j receives a FAC message from Exchange C, and changes connection with the external device (video input/output equipment, SUBIKA, microphone) connected to extension j, by the channel-switching control section 230 from 64Kbps multiplexing section 352 to the H channel multiplexing section 353.

[0184] Moreover, in the ISDN message editing section 220, as advice which the change of transmission speed completed, the completion of a transmission-speed change is edited into the facility information element of a FAC message, and it sends out to Exchange C (step S54).

[0185] f: Exchange C receives the FAC message from extension j, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from extension j, and sends it out to Exchange B (step S55).

[0186] g: Exchange B receives the FAC message from Exchange C, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange C, and sends it out to Exchange A (step S56).

[0187] h: Exchange A receives the FAC message from Exchange B, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange B, and sends it out to extension i (step S57).

[0188] i: Extension i receives the FAC message from Exchange A, and changes connection with the external device (video input/output equipment, SUBIKA, microphone) connected to extension i, by the channel-switching control section 230 from 64Kbps multiplexing section 352 to the H channel multiplexing section 353. Furthermore, the reservation dispatch demand area of the reservation dispatch information storage section 290 of a changing agency (64kbps communication link call) is set up to the reservation dispatch demand area of the reservation dispatch information storage section 290 of a change place (H0 communication link call), and the content of the reservation dispatch demand area of the reservation dispatch information storage section 290 of a changing agency is deleted. Moreover, cutting of a changing agency call is carried out according to a known cutting procedure.

[0189] Then, H0 A television conference is started by communication link (step S58).

[0190] In addition, the legend about the notation used in drawing 8 corresponding to the above-mentioned sequence explanation is as follows.

[0191] ** :64kbps It is prehension *:64kbps about B channel which the call (call number: x) changed into the class only for H channel. It is the reservation B channel monitor of a call (call number: x) H0 It is modification SETUP**:H0 to a call (call number: y). Dispatch by the rate (call number: y)

FAC**: Different call transmission-speed change demand (continuation directions of a changing agency call number and a reservation monitor are notified)

FAC**: Advice DISCof the completion of different call transmission-speed change **:64kbps By actuation from cutting [extension of a call (call number: x) i [when i performs the dispatch demand byHprocessing] extension which sets up conditions which carry out retransmission 1 communication link and cannot catch B channel required for H1 communication link by the exchange] Retransmission is carried out when information [that it cannot send from the exchange] (the reason indicated value in a reason display information element is usable transmission speed to #58 and diagnostic information) is received. The example which sets up the conditions of the retransmission is explained.

[0192] a: When the operator of extension i operates retransmission conditioning, retransmission conditioning actuation of an operator is notified to the terminal-handling analyzor 210 from the advice 320 of terminal-handling information. An operator's retransmission conditions (necessity of retransmission and transmission speed in the case of a retransmission important point = 64Kbps) are recognized, and it is set as the retransmission condition storage section 330.
[0193]
[Effect of the Invention] As explained above, according to this invention, it is possible to reduce the rate of a block to the demand of H system communication link to H system communication link demands (H0, H1, etc.).
[0194] Moreover, when connecting among two or more exchanges, the queuing time amount of H channel secured between the exchanges can be shortened, and connection of H channel (H0 a channel and H1 channel etc.) which reduces useless queuing of H channel in queuing between each exchange can be enabled.
[0195] Therefore, the place which contributes to a deployment of a circuit in a private network especially by this invention is large.
[0196] In addition, although this invention was explained according to the example, an example is a thing for explanation of this invention, therefore the range of protection of this invention is not limited to these. What the range of protection of this invention is appointed by the publication of a claim, and is in the publication of a claim and the equal range is contained in the range of protection of this invention.

[Translation done.]

* NOTICES *

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precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

TECHNICAL FIELD

[Field of the Invention] This invention relates to the ISDN exchange and the terminal unit which enforce
the connection method and approach of H channel (H0 a channel and H1 channel) in ISDN.

[Translation done.]

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PRIOR ART

[Description of the Prior Art] It sets to ISDN transmission and is 64kbps. Considering this as the configuration of 23 B+D by 23 channels and the data channel D by setting a channel Bases B is carried out.
[0003] Furthermore, six B channels are bundled among 23B, and it is H0. It considers as a channel, 24 B channels are bundled, and it is H1. Considering as a channel is performed. In this case, they are these [H0]. A channel and H1 The channel is called H channel.
[0004] Furthermore, various approaches are developed as the selection approach of this H channel. There is a technique by which the JP,4-144395,A publication was carried out as the one technique. It is H0 for every B channel which constitutes H channel from this technique. An exclusive class or a general communication link (64kbps communication links) class is registered, and it is H0. In a communication link, it is H0. B channel of an exclusive class is caught.
[0005] Moreover, in a general communication link, B channel of a general communication link class is caught, and allowance and the restriction class of a general communication link are registered for every B channel, and it is H0. With this approach of being the approach of making all B channels applicable to prehension in a communication link, and catching from other than B channel of regulation in a general communication link, it is H1. If the class only for communication links is set up, it will become impossible to use it by the communication link of other classes, and the utilization ratio of a circuit will fall. Moreover, it is H1 when the class of the combination with the communication link of other classes is set up. The communicative rate of a block becomes high.
[0006] On the other hand, when all B channels required for the configuration of H channel cannot be secured, the approach of connecting, when B channel needed with a queuing method is able to be secured is taken (for example, JP,5-153674,A).
[0007] By this approach, if B channel which constitutes H channel is used at random, securing continuous B channel to need will take time amount. Moreover, already secured B channel will be applicable also to the communication link by other H channel until B channel needed among other exchanges is securable, even if it is able to secure B channel needed between a certain exchanges, when carrying out a tandem connection.
[0008] It is H1 between a certain exchanges in a network. Two or more H1 when there is nothing a class part opium poppy about a circuit like [although considering making a communication link possible the circuit which makes other general calls possible is generally also secured between this exchange] the technique indicated by above-mentioned JP,4-144395,A It is possible that the circuit which carries out possible [of the communication link] is independently used by the general call. Therefore, H1 Queuing time amount until it realizes a communication link demand increases and carries out.
[0009] This is H0. A communication link call is H1. It is also the same as when the circuit which carries out possible [of the communication link] is being used independently.
[0010] Furthermore, it is possible for a certain extent to be satisfied with the transmission speed of 64kbps(es) of a user's communication link object with an advance of the latest information-compression technique, even if it is pictorial communication.

[Translation done.]

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EFFECT OF THE INVENTION

[Effect of the Invention] As explained above, according to this invention, it is possible to reduce the rate of a block to the demand of H system communication link to H system communication link demands (H0, H1, etc.).
[0194] Moreover, when connecting among two or more exchanges, the queuing time amount of H channel secured between the exchanges can be shortened, and connection of H channel (H0 a channel and H1 channel etc.) which reduces useless queuing of H channel in queuing between each exchange can be enabled.
[0195] Therefore, the place which contributes to a deployment of a circuit in a private network especially by this invention is large.
[0196] In addition, although this invention was explained according to the example, an example is a thing for explanation of this invention, therefore the range of protection of this invention is not limited to these. What the range of protection of this invention is appointed by the publication of a claim, and is in the publication of a claim and the equal range is contained in the range of protection of this invention.

[Translation done.]

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] As mentioned above, generally, like [communication link / H system] a telephone or the communication link of FAX, the traffic of general dispatch is high and it is uneconomical in the network which can make H system communication links (H0, H1, etc.) by H channel, and the general dispatch by B channel intermingled, from the point of a deployment of a network facility to prepare the circuit only for H system communication links.
[0012] Therefore, the first object of this invention is H0 which controls the utilization in a network to be able to use a circuit effectively when the demand of H system communication link occurs. A channel and H1 The ISDN exchange and the terminal unit which carry the H channel selection approaches, such as a channel, and this out are offered.
[0013] Furthermore, even if the object of this invention reduces the communication link quality to need temporarily to H system communication link demand, while it secures a communication link demand, it is for offering the ISDN exchange and the terminal unit which carry the H channel selection approach changed to the communication link quality needed when the facility with which can be satisfied of the communication link quality to need is securable, and this out.
[0014] Furthermore, the object of this invention is H0 which reduces useless queuing of H channel in compaction of the queuing time amount of H channel which secures the rate of a block to the demand of H system communication link between reduction and the exchange, and queuing between each exchange to H system communication link demand again. A channel and H1 The ISDN exchange and the terminal unit which carry the H channel selection approaches, such as a channel, and this out are offered.

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

MEANS

[Means for Solving the Problem] The channel selection approach of the ISDN circuit which attains the technical problem of above-mentioned this invention Two or more B channels are collectively made into H channel so that it may be indicated by claim 1 as a fundamental configuration. In the channel selection approach of the ISDN circuit which enables selection of this B channel according to the conditions registered into B channels each to be used as the class only for H channel, or a H channel combination class When the H channel connection request is received from an origination side and B channel of this H channel combination class is using it, B channel of this H channel combination class is temporarily changed into the class only for H channel. When queuing was performed until B channel which constitutes this class only for H channel changed into the empty condition, this H channel is connected with an origination side when B channel which constitutes this class only for H channel changes into an empty condition, and connection is completed, Or it is characterized by returning the class changed when a communication link was completed and connection was cut to the original class.
[0016] Furthermore, the basic configuration of the ISDN switching system which attains the technical problem of above-mentioned this invention Two or more B channels are collectively made into H channel so that it may be indicated by claim 9. The conditions registered into B channels each to be used as the class only for H channel or a H channel combination class are followed. Enable selection of this B channel and the dispatch demand by H channel is received from a master station. In the ISDN switching system which notifies the information transfer rate which can send to a master station when B channel of the demanded information transfer rate cannot be secured A demand information-transfer-rate extract means given to the dispatch demand by the first information transfer rate from a master station to ask for the second information transfer rate which can be sent and to need, Catch B channel which was given to this dispatch demand and which is needed for this second information transfer rate from the H channel combination class, and it connects. A channel class modification means to change temporarily continuous B channel required for a demand information transfer rate including this B channel into the class only for H channel, The channel class modification storage section which memorizes having changed, and a reservation dispatch means to perform the dispatch demand by the demand information transfer rate which includes connected B channel for every predetermined time amount in a master station, A channel reservation prehension means to catch temporarily all B channels except this B channel when all B channels of the class only for H channel containing this B channel are able to be caught, When the dispatch demand by the demand information transfer rate in a slave station is attained A reservation dispatch good advice means to notify reservation dispatch good information to a master station, a reservation dispatch improper advice means to notify reservation dispatch improper information to a master station when the dispatch demand by the demand information transfer rate is improper, and when reservation dispatch improper information is received An advice means of demand information-transfer-rate reservation to notify to a master station that that the information transfer rate needed in the master station which received reservation dispatch good information became possible is a reservation channel release means to release B channel caught temporarily, By the channel-switching demand to this second information transfer rate received from the master station from this first

information transfer rate The channel class of B channel caught temporarily is returned to the H channel combination class, and it has a pass control means to connect the pass between B channels between a master station and a slave station, and an advice means of channel-switching completion to notify that connection of this pass was completed to this master station.

[0017] Furthermore, the basic configuration of the ISDN terminal which attains the technical problem of above-mentioned this invention The conditions which made two or more B channels H channel collectively, and were registered into B channels each to be used as the class only for H channel or a H channel combination class are followed. In the ISDN terminal connected to the ISDN exchange which enables selection of this B channel A demand information-transfer-rate analysis means to display the information transfer rate in which channel switching is possible when the advice whose information transfer rate needed from this ISDN exchange became possible is received, A channel-switching demand means to identify the existence of a change demand of a channel, An advice means of a channel-switching demand to notify the change demand of a channel to this ISDN exchange, B channel which changes from this ISDN exchange by receiving the advice which channel switching completed, and B channel already used for a communication link are used. The channel-switching control means switched to a new transmission speed from the transmission speed which has already communicated, When the change demand of a channel is received and channel switching is completed by this channel-switching control means, it is characterized by having an advice means of channel-switching completion to notify the completion of a change of a channel to the exchange.

[0018]

[Embodiment of the Invention] According to a drawing, the gestalt of operation of this invention is explained below. In addition, in drawing, a reference number or a reference designator identically same to a similar thing is attached and explained.

[0019] Drawing 1 is an example of a configuration in the case of sending a message to the exchange 350 of extension j connected to the exchange C which lets the exchange B which is a relay center 200 pass from the master station 150 of extension i connected to the exchange A which is the gestalt of 1 operation of this invention and is a master station 100, and is connected to a slave station 300 as for example, a TV board.

[0020] Master stations 150 and 350 have CPU and main memory 130 and 330, respectively, and the communication link of them is attained by carrying out execution control of each part protocol function memorized by the main memory of a common configuration by CPU.

[0021] On the other hand, the configuration of a master station 100, a relay center 200, and a slave station 300 is equal, it has CPU and main memory 110, 210, and 310 like a terminal, and each part protocol function memorized by the main memory of a common configuration is performed by CPU. Each part protocol function memorized by these main memory is explained later.

[0022] Moreover, Exchange A and Exchange B are connected by the circuit 400 between BC which consists of an ISDN circuit of 23 B+D, and an ISDN circuit of 24B. Moreover, Exchange B and Exchange C are connected by the same circuit 500 between BC.

[0023] Exchange A, the master station 150, and Exchange C and a called terminal 300 are connected by the ISDN circuit of 2B+D, and the ISDN circuit of 24B.

[0024] Drawing 2 is drawing which explains the description of this invention by the example to which the message which holds TV board to the called terminal 350 of extension j connected to the exchange C which is a slave station 300 through the exchange B which is a relay center 200 from the master station 150 of extension i connected to the exchange A which is the master station 100 of 1 based on above-mentioned drawing 1 is sent.

[0025] ** to which dispatch is performed [j] withHextension 1 transmission speed from extension i in order for extension i, and extension j to perform a television conference with the transmission speed of H1. However, advice of that empty B channel in which H1 communication link is possible is not in the circuit BC between Exchange B and Exchange C, and it cannot send to it by B channel of the class only for H channel (*1) is received at this time.

[0026] On the other hand, they are 64kbps(es) to B channel of the H channel combination class. There is

empty B channel which can communicate and a part for the empty channel between extension i of an origination side 100, the empty channel between Exchanges A and extension of a destination side j, and Exchange C, and empty B channel of the circuit AB between Exchange A and Exchange B to be able to communicate [H1] exists. Therefore, ** which communicates using empty B channel of 64kbps(es) for a general call while reserving H1 channel.

[0027] And Hwhile communicating using empty B channel 1 A channel is reserved and the opening is monitored continuously. H1 of reservation ** which will be notified to master station side 100 if momentary prehension of a channel is performed. Subsequently, H1 reserved as reservation is completed ** by which a switch communication link is performed to a channel.

[0028] Thus, even if it reduces temporarily the communication link quality needed to H system communication link demand by this invention, while securing a communication link demand, it changes to the communication link quality needed when the facility with which can be satisfied of the communication link quality to need is securable.

[0029] Drawing 3 is the configuration of the ISDN exchanges A, B, and C in above-mentioned drawing 1, and is an example block diagram of a configuration which enables operation of the description of this invention of drawing 2. In drawing 3, the ISDN message received by the ISDN protocol control means 100 which controls the D-channel protocol of ISDN between the exchange and the exchange and between the exchange and a terminal is analyzed by the ISDN message analysis means 10.

[0030] This ISDN message analysis means 10 has the following element. When an ISDN message receives a dispatch demand, by namely, the means 11 and ISDN message which extract the information transfer rate needed from a dispatch demand When the advice of a change of a reservation monitor is received, B channel currently supervised by the call of a changing agency By the means 12 and ISDN message which supervise by continuing by the call of a change place When the advice for which reservation dispatch is improper is received, by the means 13 and ISDN message which release B channel which has been memorized in the channel class modification storage section 31, and which was caught temporarily When discharge of a reservation monitor is received, starting of a reservation dispatch means 40 to send for every fixed time amount is canceled. The channel class of B channel memorized for the means 31 by the means 14 and ISDN message which are returned to the H channel combination class When a channel-switching demand is received, the channel class of B channel memorized in the channel class modification storage section 31 is returned to the H channel combination class. By pass control means 15 to connect the pass between B channels which have been memorized in the channel class modification storage section 31 and which were caught temporarily between a master station and a slave station, and the ISDN message When a channel-switching demand is received, the exchange compares the number of B channels demanded by B channel reserved by prehension temporarily, and channel-switching demand. When it is in reserved B channel un-using it, intact B channel is released, and it has a means 16 to return the channel class of this B channel to the H channel combination class.

[0031] 20 is a means to edit an ISDN message and consists of following elements. Namely, when the dispatch demand by the demand information transfer rate is impossible in the means 21 and slave station which set the information which notifies that reservation dispatch was attained to a master station when the dispatch demand by the demand information transfer rate is possible in a slave station as an ISDN message When the dispatch demand by the demand information transfer rate is possible in the means 22 and slave station which set the information which notifies that reservation dispatch is impossible to a master station as an ISDN message When the pass between a means 23 to set the information which notifies that dispatch by the information transfer rate needed for a master station was attained as an ISDN message, and B channel caught temporarily is connectable between a master station and a slave station, a means 24 to set the information which notifies that connection of this pass was completed to the master station as an ISDN message -- and It has a means 25 to set up the information which notifies release of B channel caught temporarily to a destination side when a channel-switching demand is not received from a terminal in channel-switching reception allowed time at an ISDN message.

[0032] The channel class modification means 30 makes the channel class modification storage section

31 memorize the channel which changed into the class only for H channel the channel class of B channel specified in class modification from the H channel combination class, and changed the class, when class modification in the class only for H channel from the H channel combination class is required.

[0033] Furthermore, when class modification in the H channel combination class from the class only for H channel is required, the channel class modification means 30 changes into the H channel combination class the channel class of B channel specified in class modification from the class only for H channel, and deletes B channel specified in class modification from the channel class modification storage section 31.

[0034] Furthermore, in drawing, 40 is a reservation means to perform a dispatch demand with an information transfer rate including B channel which was defined by the system and which caught B channel temporarily to the channel reservation prehension means 50 for every fixed time amount, and has been connected.

[0035] The above-mentioned channel reservation prehension means 50 will catch temporarily all B channels except connected B channel, if all B channels memorized by the channel class modification storage section 31 including connected B channel can be caught.

[0036] The channel switch monitor means 60 supervises the time amount which permits reception of channel switching from a master station, when the time amount considered as allowance is exceeded, releases B channel caught temporarily and has the function to return the channel class of this caught B channel to the H channel combination class.

[0037] 61 is a means to memorize the time amount which permits reception of channel switching to the channel switch monitor means 60.

[0038] The intact channel maintenance monitor means 70 supervises allowed time until it releases intact B channel among B channels caught temporarily, when the time amount to permit is exceeded, releases B channel caught temporarily and returns the channel class of open B channel to the H channel combination class. 71 is a means to memorize allowed time until it releases intact B channel with the intact channel maintenance monitor means 70.

[0039] 110 is a means to use the channel prehension means 111 and the channel release means 112, and to control prehension and release of B channel. The channel prehension means 111 catches B channel managed with the channel management tool 120 corresponding to a circuit. Moreover, the channel release means 112 releases B channel managed with the channel management tool 120 corresponding to a circuit.

[0040] Drawing 4 is the example of a configuration of the ISDN terminals 150 and 350 in drawing 1, and is the example block diagram of a configuration which can carry out the description of this invention of drawing 2. In drawing 4, 210 is a means to analyze the ISDN message which received with a means 300 to control the D-channel protocol of the exchange and ISDN between terminals. When the advice whose information transfer rate which needs the notified usable information transfer rate by means 211 display on the display of a terminal, and the ISDN message became possible when the advice whose information transfer rate for which the analysis means 210 needs an ISDN message by the ISDN message became possible is received is received, the advice means 221 of a channel switch demand is started automatically, and it has a means 212 give a channel-switching demand to the exchange.

[0041] A means 220 to edit an ISDN message When requiring the change of a channel of an information transfer rate usable at the exchange, by actuation of a means 221 to set the information which requires channel switching as an ISDN message, and a terminal When the transmission speed of the call under communication link is changed to the rate of a call during a new communication link, by actuation of a means 222 to set the information which requires that the reservation monitor of B channel of a changing agency call should be continued by the new call of a change place as an ISDN message, and a terminal When the reservation monitor of B channel is canceled, by the change demand of the channel from a means 223 and the exchange which sets the information which requires that the reservation monitor of B channel should be canceled as an ISDN message an advice means 224 of the completion of a channel switch to set the information which notifies that the change of a channel was completed when the change of transmission speed is completed as an ISDN message -- and When B channel required for

dispatch with the demanded information transfer rate cannot be secured but the information transfer rate which can send is notified, according to retransmission conditions (the existence of retransmission, information transfer rate at the time of retransmission), it has a means 225 to set the transmission speed which carries out a channel monitor demand as an ISDN message.

[0042] When the change and ISDN message of a channel by actuation of a terminal receive the change demand of a channel from the exchange, B channel which changes, and B channel which has already communicated are used for the channel switch control means 230, and it changes it from the transmission speed which has already communicated to a new transmission speed. Moreover, when channel switching is completed by the channel-switching demand from the exchange, the advice means 224 of the completion of a channel switch is started, and it is ****** about advice of channel-switching completion at the exchange.

[0043] 240 supervises allowed time until a channel-switching demand is performed by actuation of a terminal, when the advice whose information transfer rate needed by the ISDN message became possible is received, when it exceeds the time amount to permit, it starts the advice means 221 of a channel switch demand automatically, and it is ****** about a channel-switching demand to the exchange.

[0044] 241 is a means to memorize allowed time until a channel-switching demand is performed by actuation of a terminal.

[0045] 250 is a means to give a dispatch demand to the exchange with an information transfer rate including B channel which was defined at the terminal and which has been connected for every fixed time amount.

[0046] When 260 is a means to analyze actuation of a terminal and actuation which changes a channel is performed When a means 261 to start the advice means 221 of a channel switch demand, and to give a channel-switching demand to the exchange, and actuation which changes the transmission speed of the call under communication link to the rate of a call during a new communication link are performed The call which carries out reservation dispatch is changed from a changing agency to the exchange at a change place (new call). When discharge actuation of a means 262 to perform the demand which changes the call which starts the advice means 222 of a reservation monitor switch, and carries out a reservation monitor to the exchange to a new call, and the reservation dispatch sent to the exchange for every fixed time amount is performed Cancel reservation dispatch at the exchange and the advice means 223 of reservation channel monitor discharge is started. When actuation of a means 263 to require discharge of the reservation monitor of B channel of the exchange, and retransmission conditioning is performed When selection actuation in a means 264 to set retransmission conditions as the storage means 281, and channel-switching mode is performed in retransmission conditions, it has a means 265 to set channel-switching mode as a channel-switching mode storage means.

[0047] 270 is a means to memorize the mode of whether automatic or hand control performs a channel-switching demand to the exchange. 280 is a means to memorize that mode which carries out reservation dispatch or is not carried out. 290 is a means to memorize the transmission speed in the case of carrying out reservation dispatch, and the existence of a reservation dispatch demand, and 330 is a means to memorize the conditions which carry out retransmission, when it cannot be sent with the demanded information transfer rate.

[0048] 310 is a display means to notify an operator of the condition of a terminal with an alphabetic character or a lamp, and 320 is a means to notify the information to which the operator operated the terminal to a terminal.

[0049] As mentioned above, in this invention, when using two or more B channels (64kbps) of an ISDN circuit as H channel (H0, H1, etc.) collectively, it is aimed at the ISDN exchange which enables selection of B channel according to the conditions registered into the B channels each as the class only for H channel (H0 dedication and H1 dedication), or a combination class (combination with 64kbps call) with H channel.

[0050] While the H channel connection request is received by the ISDN protocol control means 100 from an origination side and B channel of the H channel combination class is using it, when there is a

communication link demand of H channel, B channel of the H channel combination class is temporarily changed into the class only for H channel (H0 dedication and H1 dedication).

[0051] Thereby, the dispatch of those other than the H channel connection request can be regulated, and the queuing time amount of H channel secured by the reduction and the exchange of the rate of a block to the demand of H system communication link can be shortened.

[0052] Queuing can be performed until B channel which constitutes the class only for these H channel will be in an empty condition, and the class changed when B channel which constitutes the class only for H channel changes into an empty condition, H channel was connected with an origination side and connection was completed, or when a communication link was completed and connection was cut can be returned to the original class.

[0053] The ISDN exchange 100 which received the H channel connection request from the dispatch ISDN terminal 150 notifies the information transfer rate in which that H channel connection cannot be performed to the dispatch ISDN terminal 150 and connection are possible to a dispatch ISDN terminal, when B channel required for the H channel connection cannot be secured.

[0054] And the dispatch ISDN terminal 150 can perform the secured demand of B channel which makes possible the information transfer rate to need while performing retransmission with a connectable information transfer rate, and the ISDN exchange 100 which received this can secure a communication link demand by considering as a communication link condition with a once connectable information transfer rate.

[0055] When B channel which makes possible the demanded information transfer rate is supervised and B channel changes into an empty condition, this B channel can be reserved, and it can notify having become possible about the information transfer rate required of this dispatch ISDN terminal, and can switch to the communication link of a demand information transfer rate by selection of the ISDN terminal 150.

[0056] In the ISDN exchange 200 moreover, to every [in a master station 100] fixed time amount (modification by the system is possible) When all B channels of the class only for H channel which performs the dispatch demand by the demand information transfer rate including connected B channel, and contains connected B channel are able to be caught By catching temporarily, and notifying reservation dispatch improper information to a master station 100, when the dispatch demand by the demand information transfer rate in a slave station 300 is improper B channel caught temporarily can be released and useless queuing of H channel in queuing between each exchange can be reduced.

[0057] Furthermore, in the ISDN exchange, the monitor of B channel can be ended by actuation of a master station in the executive state of B channel of a demand information transfer rate.

[0058] Furthermore, the ISDN terminal to which it was notified again that B channel of a demand information transfer rate was secured can switch to the communication link of a demand information transfer rate automatically.

[0059] In the ISDN exchange, when B channel of a demand information transfer rate is secured, time amount until it switches to the communication link of a demand information transfer rate is supervised and a switch is not performed from from in a certain defined time amount (modification of time amount is possible), secured B channel (except for B channel currently used for the present communication link) can be released.

[0060] Moreover, in the ISDN exchange, when the ISDN terminal to which it was notified that B channel of a demand information transfer rate was secured carries out a switch demand with an information transfer rate (it is the information transfer rate of H0 at the time of demand information-transfer-rate =H1, information-transfer-rate =64kbps under present communication link, and **) lower than a demand information transfer rate, secured remaining intact B channels can be released.

[0061] Furthermore, the ISDN terminal to which it was notified in the ISDN exchange that B channel of a demand information transfer rate was secured An information transfer rate lower than a demand information transfer rate (demand information transfer rate = at the time of H1, information-transfer-rate =64kbps under current communication link, and **) H0 When a switch demand is carried out with an information transfer rate, secured remaining intact B channels can be released when a certain defined

time amount (modification of time amount is possible) passes.

[0062] Moreover, in the ISDN exchange, when the ISDN terminal to which it was notified that B channel of a demand information transfer rate was secured carries out a switch demand with an information transfer rate (it is the information transfer rate of H0 at the time of demand information-transfer-rate =H1, information-transfer-rate =64kbps under present communication link, and **) lower than a demand information transfer rate, secured remaining intact B channels can be used by other calls (other H0 call etc.).

[0063] Furthermore, the information transfer rate (for example, H1) needed for the dispatch demand by the information transfer rate (for example, 64kbps(es)) which can send to the exchange again is given and sent. [when connection is completed with the information transfer rate (for example, 64kbps(es)) which can send] When it sends at a rate [low speed / information transfer rate / (for example, H1) / which is needed by the new call number] (for example, H0) and connection is completed, by actuation of a terminal Transmission speed can be changed to the call (for example, H0) to which connection already completed the call under communication link (for example, 64kbps(es)) newly, and the reservation monitor of B channel of the call of a changing agency can be continued by the new call of a change place.

[0064] Drawing 5 is an example of a configuration in the case of using dispatch and accepting stations 150 and 350 as a television conference telephone terminal unit further. As an information I/O device, it has the video input/output equipment 1, a loudspeaker 2, and a microphone 3.

[0065] Furthermore, it corresponds to the video input/output equipment 1, and they are the H channel multiplexing section 4 and 64kbps(es) as a video signal processing circuit. The multiplexing section 5 both has the communications control section 43 and the interconnect procedure control section 44 as voice, a codec 42, and the control function section corresponding to the CIF inverter 40, the codec 41 for BITEO signals, a loudspeaker 2, and a microphone 3, and has multiplexing and the demultiplexing section 45 connected with these.

[0066] The switching control section 6 is the H channel multiplexing section 4 or 64kbps(es). The output of the multiplexing section 5 is switched and outputted and it connects with the exchange through the network interface section 7.

[0067] Next, this invention is further explained based on a concrete example. Drawing 6 is drawing explaining the message sequence for carrying out the description of this invention of having explained above-mentioned drawing 2 , and explains the content for every condition.

[When it becomes impossible to communicate according to the transmission speed demanded at the time of dispatch]

a: Dial first the number which sends to extension j, withHmaster station of extension i 1 transmission speed from A.

[0068] b: Exchange A receives the call setup (SETUP) message from extension i (step S1). The number of prehension demand channels of extension i (the number of channels which can be H1 communicated) is determined by the ISDN message analyzor 10. it is alike with the channel prehension means 111 of the B channel control section 110, and B channel of extension i is caught based on the determined number of prehension demand channels. Moreover, B channel for a general communication link of Circuit AB is caught similarly.

[0069] c: If the demand channel by the side of extension i can be caught, by the ISDN message editing section 20, the exchange A of a master station 100 edits a call setup reception (CALL_PROC) message, and sends it out to extension i (step S2).

[0070] d: If the demand channel by the side of Circuit AB can be caught, Exchange A is the ISDN message editing section 20, edits a SETUP message, and sends it out to Exchange B (step S3).

[0071] e: Exchange B receives a SETUP message from Exchange A, and determines the number of prehension demand channels of Circuit AB (the number of channels which can be H1 communicated) by the ISDN message analyzor 10. B channel of Circuit AB is caught based on the number of prehension demand channels determined by the B channel control section 110. Moreover, B channel of Circuit BC is caught similarly.

[0072] f: If a demand channel can be caught, in the ISDN message editing section 20, Exchange B edits a CALL_PROC message and sends it out to Exchange A (step S4).

[0073] g: Exchange B determines usable transmission speed (64kbps) from the number of empty channels of Circuit BC by the B channel control section 110, when the demand channel by the side of Circuit BC cannot be caught. And in the ISDN message editing section 20, usable transmission speed is set as reason indicated value in a reason display information element as a reason which cannot catch a demand channel at #58 (current utilization improper transfer capacity) and diagnostic information, a cutting (DISC) message is edited, and it sends out to Exchange A (step S5).

[0074] A known call release sequence performs release and release of a call for the channel between Circuits AB henceforth.

[0075] h: Moreover, Exchange A edits a DISC message including the reason display information which received the DISC message from Exchange B, is the ISDN message editing section 20 and was received from Exchange B, send it out to extension i, it edits the advice (REL) message of release, and sends it out to Exchange B (step S6).

[0076] A known release sequence performs release and release of a call for the channel between extension i, and Circuit AB henceforth.

[A communication link reservation demand with the retransmission and need transmission speed in usable transmission speed]

a: According to the conditions memorized by the retransmission condition storage section 330, set usable transmission speed (64kbps) and the transmission speed (H1) needed as a monitor demand of a channel as the transfer capacity information element in a facility information element, and extension i carries out retransmission to a SETUP message (step S7). It seems that an edit format of this facility information element is shown in drawing 9 - drawing 12 .

[0077] That is, drawing 9 is an example of an edit format of a facility information element, and is defined according to an individual by the class of next offer operation (notes 1).

[0078]
A channel monitor demand Advice of the channel-switching completion in a network Channel reservation dispatch A transmission-speed change demand Channel reservation improper advice Advice of the completion of a transmission-speed change The advice which can be channel reserved A different call transmission-speed change demand Channel-switching good advice Advice of the completion of a different call transmission-speed change A channel-switching demand differs from the content of the argument in the above-mentioned offer operation response (notes 2).

[0079] Offer operation serves as the content of the format which contains AKYUMENTO in "a channel monitor demand", "channel-switching good advice", "a channel-switching demand", "advice of channel-switching completion", "a transmission-speed change demand", and "a different call transmission-speed change demand." And as the encoding example of the argument of a ** case is shown in drawing 10 thru/or drawing 12 , drawing 10 is the case where offer operation is "a channel monitor demand" and "channel-switching good advice."

[0080] Furthermore, drawing 11 is the encoding example of an argument in case offer operation is "a channel-switching demand", "advice of channel-switching completion", and "a transmission-speed change demand."

[0081] Moreover, drawing 12 is the case where offer operation is "a different call transmission-speed change demand." Continuation directions (notes 3) are coded in drawing 12 by those without continuation (0), and those with continuation (1).

[0082] b: Give return explanation at drawing 6 . Exchange A receives the SETUP message from extension i (step S7), and the number of B channels corresponding to usable transmission speed (64kbps) is determined by the ISDN message analyzor 10, and when the transmission speed which transmission speed is 64kbps(es) and needs as a monitor demand of a channel needs H channel, it determines to catch B channel used for this communication link from the H channel combination class.

[0083] B channel of extension i is caught from B channel of the H channel combination class by the B channel control section 110. Moreover, B channel of Circuit AB is similarly caught from B channel of

the H channel combination class.

[0084] The ISDN message analyzor 10 extracts an information transfer rate from the transfer capacity information element in a facility information element. The required number of B channels (H1) is determined. Furthermore, in the channel class modification section 30 Caught B channel is included about each by the side of extension i, and Circuit AB. The class of B channel which only the part which performs H1 communication link followed is changed into the class only for H channel from the H channel combination class. A reservation dispatch important point is set as setting out of B channel which changed the class into the channel class modification storage section 31, and the reservation dispatch necessity area of the channel class modification storage section 31.

[0085] c: If the demand channel by the side of extension i can be caught, in the ISDN message editing section 20, Exchange A edits a CALL_PROC message and sends it out to extension i (step S8).

[0086] d: If the demand channel by the side of Circuit AB can be caught, in the ISDN message editing section 20, Exchange A edits into a SETUP message the transmission speed (H1) needed as a channel monitor demand like the SETUP message which received from extension i, and sends it out to Exchange B (step S9).

[0087] e: Exchange B receives the SETUP message from Exchange A, determines the number of B channels corresponding to usable transmission speed (64kbps) by the ISDN message analyzor 10, and catches B channel of Circuit AB from B channel of the H channel combination class by the B channel control section 110.

[0088] Moreover, B channel of Circuit BC is similarly caught from B channel of the H channel combination class.

[0089] An information transfer rate is extracted from the transfer capacity information element in a facility information element (refer to drawing 10) by the ISDN message analyzor 10. The required number of B channels (H1) is determined. In the channel class modification section 30 B channel which changed the class of B channel which only the part which performs the H1 communication links including caught B channel about each by the side of Circuit AB and Circuit BC followed into the class only for H channel from the H channel combination class, and changed the class into the channel class modification storage section 31 is memorized.

[0090] f: If the demand channel by the side of Circuit AB can be caught, Exchange B edits a CALL_PROC message in the ISDN message editing section 20, and sends it out to Exchange A (step S10).

[0091] g: If the demand channel by the side of Circuit BC can be caught, in the ISDN message editing section 20, Exchange B edits into a SETUP message the transmission speed (H1) needed as a channel monitor demand like the SETUP message which received from Exchange A, and sends it out to Exchange C (step S11).

[0092] h: Exchange C receives the SETUP message from Exchange B, determines the number of B channels corresponding to usable transmission speed (64kbps) by the ISDN message analyzor 10, and catches B channel of Circuit BC from B channel of the H channel combination class by the B channel control section 110.

[0093] Moreover, B channel of extension j is similarly caught from B channel of the H channel combination class.

[0094] Extract an information transfer rate from the transfer capacity information element in a facility information element by the ISDN message analyzor 10, and the required number of B channels (H1) is determined. In the channel class modification section 30, about each by the side of Circuit BC and extension j B channel which changed the classes of B channel which only the part which performs H1 communication link followed including caught B channel into the class only for H channel from the H channel combination class, and changed the class into the channel class modification storage section 31 is memorized.

[0095] i: If the demand channel by the side of Circuit BC can be caught, Exchange C edits a CALL_PROC message in the ISDN message editing section 20, and sends it out to Exchange B (step S12).

[0096] j: If Exchange C can catch the demand channel by the side of extension j, carry out SETUP message editing of it to extension j, in the ISDN message editing section 20, and send it out to extension j.

[0097] k: With a known call offering procedure, a response (CONN) message is received from extension j, and extension i, and extension j will be in a condition during a communication link via Exchanges A, B, and C henceforth (step S13).

[The monitor and prehension] of a channel in which the channel carried out empty monitor reservation a: The reservation dispatch section 40 is started for every fixed time amount by Exchange A, and if the reservation dispatch necessity area of the channel class modification storage section 31 by the side of extension i, and Circuit AB is a reservation dispatch important point, in B channel memorized by this storage section, temporary reservation prehension will be performed for each B channel by the B channel control section 110 except for already caught B channel.

[0098] When B channel of extension i, and Circuit AB is able to be caught, channel reservation dispatch is edited into the facility information element of a facility (FAC) message in the ISDN message editing section 20, and it sends out to Exchange B (step S14).

[0099] b: Exchange B received the FAC message from Exchange A, and has already caught it in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit AB and Circuit BC -- remove B channels and perform temporary reservation prehension for each B channel by the B channel control section 110.

[0100] When B channel of Circuit AB and Circuit BC is able to be caught, in the ISDN message editing section 20, channel reservation dispatch is edited into the facility information element of a FAC message, and it sends out to Exchange C (step S15).

[0101] c: Exchange C received the FAC message from Exchange B, and has already caught it in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit BC and extension j -- remove B channels and perform temporary reservation prehension for each B channel by the B channel control section 110.

[0102] When B channel of Circuit BC and extension j cannot be caught, a channel reservation failure is edited into the facility information element of a FAC message in the ISDN message editing section 20, and it sends out to Exchange B (step S16).

[0103] d: Exchange B receives the FAC message from Exchange C, analyzes a receiving content by the ISDN message analyzor 10, and if channel reservation is improper, it will release B channel [finishing / reservation prehension] in B channel memorized by the channel class modification storage section 31 by the B channel control section 110.

[0104] Moreover, a channel reservation failure is edited into the facility information element of a FAC message in the ISDN message editing section 20, and it sends out to Exchange A (step S17).

[0105] e: Exchange A receives the FAC message from Exchange B, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is improper, will be memorized by the channel class modification storage section 31 by the B channel control section 110, and will release B channel [finishing / reservation prehension] in B channel.

[0106] f: With the following period, when the reservation dispatch section 40 is started, the procedure of above-mentioned a-b performs channel reservation dispatch, and when B channel of Circuit BC and extension j is able to be caught in Exchange C, edit channel reservation **** into the facility information element of a FAC message in the ISDN message editing section 20, and send out to Exchange B (step S18).

[0107] g: Exchange B receives the FAC message from Exchange C, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is possible, edits channel reservation **** into the facility information element of a FAC message in the ISDN message editing section 20, and sends it out to Exchange A (step S19).

[0108] h: Exchange A receives the FAC message from Exchange B, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is possible, edits the information transfer rate (H1) which became usable and to need into the transfer capacity information element in the facility

information element of a FAC message in the ISDN message editing section 20 as advice in which channel switching is possible, and sends it out to extension i (step S20).

[A channel change to a reservation channel]

a: Extension i receives a FAC message from Exchange A, by the ISDN message analyzor 210, it extracts an usable information transfer rate (H1) from the transfer capacity information element in a facility information element, sets an information transfer rate as the terminal status-display section 310, displays an usable information transfer rate on the display of a terminal, and is taken as a channel-switching wait operation condition.

[0109] Channel-switching actuation of an operator is notified to the terminal-handling analyzor 260 from the advice section 320 of terminal-handling information, it recognizes the channel-switching demand from an operator, edits B channel which requires a change of a channel identifier information element as the information transfer rate which requires a change of the transfer capacity information element in the facility information element of a FAC message as a change demand of a channel in the ISDN message editing section 220, and sends it out to Exchange A (step S21).

[0110] b: Return the channel class of B channel which Exchange A received the FAC message from extension i, connected the pass of B channel by the side of extension i by which reservation prehension was carried out temporarily, and Circuit AB memorized by the channel class modification storage section 31 by the ISDN message analyzor 10, and connected pass in the channel class modification section 31 to the H channel combination class.

[0111] Moreover, the same information as the FAC message which received from extension i, in the ISDN message editing section 20 is edited into a FAC message, and it sends out to Exchange B (step S22).

[0112] c: Return the channel class of B channel which Exchange B received the FAC message from Exchange A, connected the pass of B channel by the side of the circuit AB by which reservation prehension was carried out temporarily, and Circuit BC memorized by the channel class modification storage section 31 by the ISDN message analyzor 10, and connected pass in the channel class modification section 31 to the H channel combination class.

[0113] Moreover, the same information as the FAC message which received from Exchange A in the ISDN message editing section 20 is edited into a FAC message, and it sends out to Exchange C (step S23).

[0114] d: Return the channel class of B channel which Exchange C received the FAC message from Exchange B, connected the pass of B channel by the side of the circuit BC by which reservation prehension was carried out temporarily, and extension j memorized by the channel class modification storage section 31 by the ISDN message analyzor 10, and connected pass in the channel class modification section 30 to the H channel combination class.

[0115] Moreover, in the ISDN message editing section 20, as advice which the change of the channel in a network completed, the channel-switching completion in a network is edited into the facility information element of a FAC message (refer to drawing 9), and it sends out to Exchange B (step S24).

[0116] e: Exchange B receives the FAC message from Exchange C, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange C, and sends it out to Exchange A (step S25).

[0117] f: Exchange A receives the FAC message from Exchange B, edits the transmission speed (H1) which changed to the transfer capacity information element in the facility information element of a FAC message, the B channel number which carries out channel switching to a channel identifier information element, and advice of the channel-switching completion in a network as advice which channel switching in a network completed in the ISDN message editing section 20, and sends them out to extension i (step S26).

[0118] g: Extension i receives the FAC message from Exchange A, by the channel-switching control section 230, it extracts a transfer capacity information element and a channel identifier information element from a facility information element, sets the information transfer rate of a transfer capacity information element as the terminal status-display section 310, displays an usable information transfer

rate (H1) on the display of a terminal, and is taken as a channel-switching wait operation condition.

[0119] Channel-switching actuation of an operator is notified to the terminal-handling analyzor 260 from the advice section 320 of terminal-handling information. The channel-switching demand from an operator is recognized. In the ISDN message editing section 220 The information transfer rate which changes to the transfer capacity information element in the facility information element of a FAC message in order to require a transmission-speed change from extension j (H1), The B channel number which requires a change, and a transmission-speed change demand are edited into a channel identifier information element, and it sends out to Exchange A (step S27).

[0120] h: Exchange A receives the FAC message from extension i, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from extension i, and sends it out to Exchange B (step S28).

[0121] i: Exchange B receives the FAC message from Exchange A, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange A, and sends it out to Exchange C (step S29).

[0122] j: In order that Exchange C may receive the FAC message from Exchange B and may require a transmission-speed change from extension j, in the ISDN message editing section 20, it edits the B channel number which requires the changes including B channel which has already communicated the information transfer rate (H1) which can communicate to the transfer capacity information element in the facility information element of a FAC message to the channel identifier information element, and sends it out to extension j (step S30).

[0123] k: Extension j receives the FAC message from Exchange C, by the ISDN message analyzor 210, extracts a transfer capacity information element and a channel identifier information element from a facility information element, and sets the information transfer rate of a transfer capacity information element as the terminal status-display section 310. An usable information transfer rate (H1) is displayed on the display of a terminal, and the pass between voice, 64Kbps multiplexing section 352 which multiplexes an image, and B channel already used by communication link is released to 64kbps(es) in the switching control section 351 by the channel-switching control section 230. And the pass between B channels notified to H1 from B channel and Exchange C which have already been used by the communication link with voice and the H channel multiplexing section 353 which has multiplexed the image is connected, and the condition of a terminal is made into a communication link synchronous establishment waiting state.

[0124] Moreover, in the ISDN message editing section 220, as advice which the change of transmission speed completed, the completion of a transmission-speed change is edited into the facility information element of a FAC message, and it sends out to Exchange C (step S31).

[0125] l: Exchange C receives the FAC message from extension j, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from extension j, and sends it out to Exchange B (step S32).

[0126] m: Exchange B receives the FAC message from Exchange C, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange C, and sends it out to Exchange A (step S33).

[0127] n: Exchange A receives the FAC message from Exchange B, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange B, and sends it out to extension i (step S34).

[0128] o: Extension i receives the FAC message from Exchange A, is the channel-switching control section 230, and releases the pass between B channels already used for 64kbps(es) in the switching control section 151 by the communication link with voice and 64Kbps multiplexing section 152 which multiplexes an image. Subsequently, the pass between B channels notified to H1 from B channel and Exchange A which have already been used by the communication link with voice and the H channel multiplexing section 153 which has multiplexed the image is connected.

[0129] p: According to the data communication procedure between known terminals, make a communication link synchronization establish between extension i, and extension j, and perform the data

transmission and reception between extension i, and extension j henceforth (step S35).

[0130] Here, the legend about the notation used in drawing 6 is as follows.

[0131] **: Circuit prehension improper ** between exchange B-C: It is the existence check (all channels are vacant, and it catches at the time, and reserves temporarily) of a modification *:opening channel to the class only for H channel.

- : -- the ** side of open ◇ prehension channel of momentary prehension -- wearing -- near pass setting out and the H channel combination class -- modification DISC**: -- the retransmission after the speed conversion accompanied by an advice SETUP**:channel monitor for the channel prehension failure for transmission speed (64K)

FAC**: Channel reservation dispatch (the check of an empty channel, and momentary reservation)

FAC**: Channel reservation response (channel reservation improper advice)

FAC**: Channel reservation response (channel reservation good advice)

FAC**: Channel-switching possible advice (an usable information transmission rate and usable B channel are notified)

FAC**: Channel-switching demand (the information transmission rate and B channel to be used are notified)

FAC**: Advice FAC[of the channel-switching completion in a network] **: Advice of the channel-switching completion in a network (the information transfer rate and B channel which were changed are notified)

FAC10: Transmission-speed change demand FAC11: Transmission-speed change demand (the information transfer rate and B channel to change are notified)

FAC12: When the advice which can change a channel is received from Exchange A on extension i, with reference to the advice of the completion of a transmission-speed change [change demand processing of the automatic channel of extension i] next drawing 1 , and drawing 6 , extension i explains the example which performs the change demand of a channel automatically.

[0132] a: When the operator of extension i chooses channel-switching mode, modification actuation in an operator's channel-switching mode is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. An operator's change mode change is recognized, channel-switching mode is read from the channel-switching mode storage section 270, when channel-switching mode is manual change mode, automatic change mode is set as the channel-switching mode storage section 270, and, in the case of automatic change mode, manual change mode is set up at the channel-switching mode storage section 270. The channel-switching mode simultaneously set as the display of a terminal is displayed.

[0133] b: Extension i receives a FAC message including the channel-switching possible advice to which the information transfer rate which can be changed to the transfer capacity information element in a facility information element was set from Exchange A, is the ISDN message analyzor 210, extracts the information transfer rate which can be changed from the transfer capacity information element in a facility information element, and sets the transmission speed which can be changed as the terminal status-display section 310.

[0134] c: The ISDN message analyzor 210 extracts channel-switching mode from the channel-switching mode storage section 270. and when change mode is automatic channel switching, the information transfer rate which comes out ISDN message editing section 220, and requires a change of the transfer capacity information element in the facility information element of a FAC message as a change demand of a channel, and the B channel number which requires a change of a channel identifier information element are edited, and it sends out to Exchange A.

[0135] d: Perform channel switching henceforth like the procedure after b: of the above-mentioned [a channel change to a reservation channel] term.

[Change demand processing of the automatic channel after fixed time amount progress] When the advice which can change a channel is similarly received from Exchange A on extension i, with reference to drawing 1 and drawing 6 again, even if extension i does not perform change actuation, it explains the example which performs the change demand of a channel after passing fixed time amount.

[0136] a: When the operator of extension i chooses channel-switching mode, modification actuation in an operator's channel-switching mode is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. An operator's change mode change is recognized, channel-switching mode is read from the channel-switching mode storage section 270, when channel-switching mode is manual change mode, automatic change mode is set as the channel-switching mode storage section 270, and, in the case of automatic change mode, manual change mode is set up at the channel-switching mode storage section 270. The channel-switching mode simultaneously set as the display of a terminal is displayed.

[0137] b: Extension i receives a FAC message including the channel-switching possible advice to which the information transfer rate which can be changed to the transfer capacity information element in a facility information element was set from Exchange A. And the information transfer rate which can be changed from the transfer capacity information element in a facility information element by the ISDN message analyzor 210 is extracted, and the transmission speed which can be changed is set as the terminal status-display section 310.

[0138] c: The ISDN message analyzor 210 extracts channel-switching mode from the channel-switching mode storage section 270. And when change mode is manual channel switching, allowed time until channel switching is performed by actuation of extension i is extracted from the monitor allowed time storage area of the Management Department 241 between channel-switching demands, and it is set as the time amount storage area for a monitor of the Management Department 241 between channel-switching demands.

[0139] d: The channel-switching Monitoring Department 240 of extension i subtracts the time amount set as the time amount storage area for a monitor of the Management Department 241 between channel-switching demands for every second. When a subtraction result is set to "0", the information transfer rate which requires a change of the transfer capacity information element in the facility information element of a FAC message as a change demand of a channel, and the B channel number which requires a change of a channel identifier information element are edited from the ISDN message editing section 220, and it sends out to Exchange A.

[0140] e: Perform channel switching henceforth like the procedure after b: of the above-mentioned [a channel change to a reservation channel] term.

[Reservation discharge processing (1) of a channel in case channel switching is not performed from extension i] When advice which can change a channel is performed on extension i, from Exchange A in drawing 1 , they are 64kbps(es) at extension i, and extension j again. When the change of a channel is not performed by the channel from extension i, during a call, the example of which reservation of a channel is canceled is explained. Reservation discharge of a channel is explained below to be message sequence ** of drawing 7 .

[0141] a: Perform advice which can change a channel on extension i, from Exchange A (step S40). When carrying out this advice, time amount until it changes the channel beforehand registered into the system by the ISDN message editing section 20 is extracted from the channel-switching allowed time storage section 61. This is set as the channel class modification storage section 31.

[0142] b: The channel-switching Monitoring Department 60 of Exchange A returns the channel class of B channel memorized by the channel class modification storage section 31 to the H channel combination class by the channel class modification section 30, when the time amount set as the channel class modification storage section 31 for every second is subtracted and a subtraction result is set to "0" (step S41). Subsequently, only B channel reserved in the B channel concerned by the B channel control section 110 is released.

[0143] c: At this time, as advice of release of reserved B channel, Exchange A edits a reservation channel release request into the facility information element of a FAC message, and sends it out to Exchange B by the ISDN message editing section 20 (step S42).

[0144] d: Exchange B receives the FAC message from Exchange A. Subsequently, the channel class of B channel memorized by the channel class modification storage section 31 by the channel class modification section 30 is returned to the H channel combination class. And it releases except B channel

currently used by communication link in the B channel concerned by the B channel control section 110.

[0145] e: As advice of release of B channel reserved by the ISDN message editing section 20, Exchange B edits a reservation channel release request into the facility information element of a FAC message, and sends it out to Exchange C (step S43).

[0146] f: Exchange C receives the FAC message from Exchange B, and returns the channel class of B channel memorized by the channel class modification storage section 31 by the channel class modification section 30 to the H channel combination class. And it releases except B channel currently used by communication link in this B channel by the B channel control section 110.

[0147] In addition, the legend about the notation used in drawing 7 corresponding to the above-mentioned sequence explanation is as follows.

[0148] ** : supervise an empty channel and it is open FAC**:channel reservation dispatch (the check of an empty channel, and momentary reservation) of a reservation channel temporarily [of momentary reservation of a channel / completion *:].

FAC**: Channel reservation response (channel reservation good advice)

FAC**: Channel switchable advice (an usable information transfer rate and usable B channel are notified)

FAC**: When there are few B channels demanded by the channel-switching demand than the number of B channels which has reserved reservation of advice of reservation channel disconnection [non-used B channel by Exchange A in discharge processing] next drawing 1 , and drawing 6 when Exchange A receives the change demand of a channel from extension i, explain the example of which reservation of intact B channel is canceled.

[0149] a: Exchange A receives the information transfer rate which requires a change of the transfer capacity information element in a facility information element, and the FAC message which contained in the channel identifier information element the B channel number which requires a change as a channel-switching demand from extension i (step S27).

[0150] In the ISDN message analysis 10, pass connection of B channel which extracted and reserved the demand channel number is made from the channel identifier information element in a facility information element. The number of B channels demanded by the number of B channels which this has reserved by Exchange A, and the channel-switching demand is compared.

[0151] When intact B channel is in reserved B channel, the channel class of intact B channel is returned to the H channel combination class with the channel class modification means 30, and intact B channel is simultaneously released by the B channel control section 110.

[0152] b: Release intact reservation B channel like [Exchange B and Exchange C] Exchange A. [Reservation discharge processing (2) of a channel in case channel switching is not performed from extension i] The example which cancels reservation of a channel of above-mentioned extension i, in channel switching in the case of becoming the same conditions as reservation discharge processing (1) of a channel in case channel switching is not performed is explained.

[0153] a: Exchange A receives the information transfer rate which requires a change of the transfer capacity information element in a facility information element, and the FAC message which contained in the channel identifier information element the B channel number which requires a change as a channel-switching demand from extension i (step S27).

[0154] A demand channel number is extracted from the channel identifier information element in a facility information element by the ISDN message analysis 10, and pass connection of reserved B channel is made. The number of B channels demanded by the number of B channels reserved by Exchange A and the channel-switching demand is compared. Consequently, when intact B channel is in reserved B channel, the time amount beforehand registered into the system until it releases intact reservation B channel is extracted from the intact channel maintenance allowed time storage section 71. And it is set as the channel class modification storage section 31.

[0155] b: The intact channel maintenance Monitoring Department 70 of Exchange A subtracts the time amount set as the channel class modification storage section 31 for every second. When a subtraction result is set to "0", the channel class of intact B channel is returned to the H channel combination class

by the channel class modification section 30. Subsequently, B channel intact at the B channel control section 110 is released.

[0156] C: Release intact reservation B channel like [Exchange B and Exchange C] Exchange A. [Reservation dispatch processing in which reservation of reservation B channel is required] When the CONN message which the connection by 64kbps(es) completed from Exchange A is received, an example is explained about the processing which performs reservation dispatch which requires reservation of reservation B channel of Exchange A for every fixed time amount from extension i.

[0157] a: When the operator of extension i chooses reservation dispatch mode, modification actuation in an operator's reservation dispatch mode is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. An operator's reservation dispatch mode change is recognized and reservation dispatch mode is read from the reservation dispatch mode storage section 280.

[0158] In having no reservation dispatch of reservation dispatch mode, it sets those with reservation dispatch as the reservation dispatch mode storage section 280. In with reservation dispatch, those without reservation dispatch are set up at the reservation dispatch mode storage section 280. Moreover, the reservation dispatch mode set as the display of a terminal is displayed.

[0159] b: Extension i edits into the transfer capacity information element in a facility information element the transmission speed (H1) needed for a SETUP message as a monitor demand of usable transmission speed (64kbps) and a channel by the ISDN message editing section 220. and if the reservation dispatch mode of the reservation dispatch mode storage section 280 is with reservation dispatch when it sends out to Exchange A, the transmission speed to need will be boiled and set as the rate storage area of the reservation dispatch information storage section 290.

[0160] c: Extension i receives a CONN message from Exchange A. By the ISDN message analyzor 210, if the reservation dispatch mode of the reservation dispatch mode storage section 280 is with reservation dispatch, a reservation dispatch demand will be set as the reservation dispatch demand area of the reservation dispatch information storage section 290.

[0161] d: The reservation dispatch control section 250 of extension i is started for every fixed time amount, and extracts the reservation dispatch demand area of the reservation dispatch information storage section 290. If the content of reservation dispatch demand area is a reservation dispatch demand, channel reservation dispatch is edited into the facility information element of a FAC message in the ISDN message editing section 220, and it sends out to Exchange A.

[0162] e: Exchange A receives the FAC message from extension i. it has already caught about B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of extension i, and Circuit AB -- B channels are removed and temporary reservation prehension is performed for each B channel by the B channel control section 110. Reservation dispatch needlessness is set as the reservation dispatch necessity area of the channel class modification storage section 31.

[0163] When B channel of extension i, and Circuit AB is able to be caught, by the ISDN message editing section 20, channel reservation dispatch is edited into the facility information element of a FAC message, and it sends out to Exchange B (step S14).

[0164] f: Exchange B receives a FAC message from Exchange A. In B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit AB and Circuit BC, temporary prehension is performed for each B channel by the B channel control section 110 except for already caught B channel.

[0165] When B channel of Circuit AB and Circuit BC is able to be caught, channel reservation dispatch is edited into the facility information element of a FAC message in the ISDN message editing section 20, and it sends out to Exchange C (step S15).

g: Exchange C receives a FAC message from Exchange B. In B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit BC and extension j, temporary prehension is performed for each B channel by the B channel control section 110 except for already caught B channel.

[0166] When B channel of Circuit AB and extension j is able to be caught, channel reservation **** is

edited into the facility information element of a FAC message in the ISDN message editing section 20, and it sends out to Exchange B (step S18).

h: Exchange B receives the FAC message from Exchange C, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is possible, edits channel reservation **** into the facility information element of a FAC message in the ISDN message editing section 20, and sends it out to Exchange A (step S19).

[0167] i: Exchange A receives the FAC message from Exchange B, analyzes a receiving content by the ISDN message analyzor 10, if channel reservation is possible, edits the information transfer rate which became usable and to need into the transfer capacity information element in the facility information element of a FAC message in the ISDN message editing section 20 as advice in which channel switching is possible, and sends it out to extension i (step S20).

[Processing of which reservation of H1 communication link is canceled from extension i] Below, extension i is during the communication link by 64kbps(es), and explains the example which cancels reservation of H1 communication link of extension i in the reservation executive state of B channel of H one-copy credit.

[0168] a: When the operator of extension i operates reservation dispatch discharge, actuation of reservation dispatch discharge of an operator is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. Reservation dispatch discharge of an operator is recognized, advice of reservation channel discharge is edited into the facility information element of a FAC message in the ISDN message editing section 220, and it sends out to Exchange A.

[0169] b: Exchange A receives the FAC message from extension i, and judges whether it is a reservation seized condition temporary except B channel already used by the communication link in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of extension i, and Circuit AB. If it is a reservation seized condition, this B channel will be canceled by the B channel control section 110, and the channel class of all B channels memorized by the channel class modification storage section 31 in the channel class modification section 30 will be returned to the H channel combination class.

[0170] Moreover, in the ISDN message editing section 20, advice of reservation channel discharge is edited into the facility information element of a FAC message, and it sends out to Exchange B.

[0171] c: Exchange B receives the FAC message from Exchange A, and judges whether it is a reservation seized condition temporary except B channel already used by the communication link in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit AB and Circuit BC. If it is a reservation seized condition, the B channel concerned will be canceled by the B channel control section 110, and the channel class of all B channels memorized by the channel class modification storage section 31 in the channel class modification section 30 will be returned to the H channel combination class.

[0172] Moreover, in the ISDN message editing section 20, advice of reservation channel discharge is edited into the facility information element of a FAC message, and it sends out to Exchange C.

[0173] d: Exchange C receives the FAC message from Exchange B, and judges whether it is a reservation seized condition temporary except B channel already used by the communication link in B channel memorized by the ISDN message analyzor 10 by the channel class modification storage section 31 by the side of Circuit AB and extension j. If it is a reservation seized condition, this B channel will be canceled by the B channel control section 110. The channel class of all B channels memorized by the channel class modification storage section 31 in the channel class modification section 30 is returned to the H channel combination class.

[Processing which changes the call of 64kbps to the transmission speed of H0 call by actuation from extension i] Extension i is during the communication link by 64kbps(es). H1 In the reservation executive state of B channel for a communication link, the call has been held during the communication link by 64kbps(es) from extension i. other calls -- H0 B channel by which it sent and the call changed the channel class into the class only for H channel during the communication link by 64kbps(es) -- using it -- under a communication link -- a condition -- ** -- the case where it becomes -- the actuation from

extension i -- the call of 64kbps -- H0 The example changed to the transmission speed of a call is explained.

[0174] In accordance with the message sequence of drawing 8 , the change of this transmission speed is explained below.

[0175] a: When modification actuation of the transmission speed of a call in which the operators of extension i differed is performed, transmission-speed modification actuation of a call in which operators differed is notified to the terminal-handling analyzor 260 from the advice 320 of terminal-handling information. The change request of the transmission speed of the call from which the operator differed is recognized, and in order to perform the transmission-speed change request to a call which is different at the exchange, the call number of the 64Kbps communication link call which is communicating previously in the ISDN message editing section 220 is set as the facility information element of a FAC message.

[0176] Furthermore, continuation is set as the reservation monitor continuation directions which continue the reservation monitor of a changing agency call (64Kbps communication link call) in a change place call (H0 communication-link call). This edits a different call transmission-speed change demand, and it sends out to Exchange A (step S50).

[0177] b: Exchange A receives a FAC message from extension i. By the ISDN message analyzor 10, reservation monitor directions are extracted from the facility information element in a FAC message. They are all B channels and reservation dispatch necessity which extract a call number from a facility information element, and are memorized by this channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) when a reservation monitor is continuation H0 It is set as the channel class modification storage section 31 corresponding to the communication link call to depend. And all B channels of the channel class modification storage section 31 concerned corresponding to a call number (communication link call by 64kbps) are deleted.

[0178] Moreover, in the ISDN message editing section 20, the same information as the FAC message which received from extension i is edited into a FAC message, and it sends out to Exchange B (step S51).

[0179] c: Exchange B receives a FAC message from Exchange A, and extracts reservation monitor directions from the facility information element in a FAC message by the ISDN message analyzor 10. When a reservation monitor is continuation, a call number is extracted from a facility information element. They are all B channels and reservation dispatch necessity which are memorized by the channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) H0 It is set as the channel class modification storage section 31 corresponding to the communication link call to depend. All B channels of this channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) are deleted.

[0180] Moreover, in the ISDN message editing section 20, the same information as the FAC message which received from Exchange A is edited into a FAC message, and it sends out to Exchange C (step S52).

[0181] d: Exchange C receives a FAC message from Exchange B, and extracts reservation monitor directions from the facility information element in a FAC message by the ISDN message analyzor 10. They are all B channels and reservation dispatch necessity which extract a call number from a facility information element, and are memorized by this channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) when a reservation monitor is continuation H0 It is set as the channel class modification storage section 31 corresponding to the communication link call to depend. Subsequently, all B channels of this channel class modification storage section 31 corresponding to a call number (communication link call by 64kbps) are deleted.

[0182] Moreover, in the ISDN message editing section 20, the same information as the FAC message which received from Exchange B is edited into a FAC message, and it sends out to extension j (step S53).

[0183] e: Extension j receives a FAC message from Exchange C, and changes connection with the external device (video input/output equipment, SUBIKA, microphone) connected to extension j, by the

channel-switching control section 230 from 64Kbps multiplexing section 352 to the H channel multiplexing section 353.

[0184] Moreover, in the ISDN message editing section 220, as advice which the change of transmission speed completed, the completion of a transmission-speed change is edited into the facility information element of a FAC message, and it sends out to Exchange C (step S54).

[0185] f: Exchange C receives the FAC message from extension j, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from extension j, and sends it out to Exchange B (step S55).

[0186] g: Exchange B receives the FAC message from Exchange C, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange C, and sends it out to Exchange A (step S56).

[0187] h: Exchange A receives the FAC message from Exchange B, edits the FAC message of the information same in the ISDN message editing section 20 as the FAC message from Exchange B, and sends it out to extension i (step S57).

[0188] i: Extension i receives the FAC message from Exchange A, and changes connection with the external device (video input/output equipment, SUBIKA, microphone) connected to extension i, by the channel-switching control section 230 from 64Kbps multiplexing section 352 to the H channel multiplexing section 353. Furthermore, the reservation dispatch demand area of the reservation dispatch information storage section 290 of a changing agency (64kbps communication link call) is set up to the reservation dispatch demand area of the reservation dispatch information storage section 290 of a change place (H0 communication link call), and the content of the reservation dispatch demand area of the reservation dispatch information storage section 290 of a changing agency is deleted. Moreover, cutting of a changing agency call is carried out according to a known cutting procedure.

[0189] Then, H0 A television conference is started by communication link (step S58).

[0190] In addition, the legend about the notation used in drawing 8 corresponding to the above-mentioned sequence explanation is as follows.

[0191] ** :64kbps It is prehension *:64kbps about B channel which the call (call number: x) changed into the class only for H channel. It is the reservation B channel monitor of a call (call number: x) H0 It is modification SETUP**:H0 to a call (call number: y). Dispatch by the rate (call number: y) FAC**: Different call transmission-speed change demand (continuation directions of a changing agency call number and a reservation monitor are notified) FAC**: Advice DISCof the completion of different call transmission-speed change **:64kbps By actuation from cutting [extension of a call (call number: x) i [when i performs the dispatch demand byHprocessing] extension which sets up conditions which carry out retransmission 1 communication link and cannot catch B channel required for H1 communication link by the exchange] Retransmission is carried out when information [that it cannot send from the exchange] (the reason indicated value in a reason display information element is usable transmission speed to #58 and diagnostic information) is received. The example which sets up the conditions of the retransmission is explained.

[0192] a: When the operator of extension i operates retransmission conditioning, retransmission conditioning actuation of an operator is notified to the terminal-handling analyzor 210 from the advice 320 of terminal-handling information. An operator's retransmission conditions (necessity of retransmission and transmission speed in the case of a retransmission important point = 64Kbps) are recognized, and it is set as the retransmission condition storage section 330.

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the example block diagram of this invention.
[Drawing 2] It is drawing explaining the description of this invention.
[Drawing 3] It is drawing explaining the configuration of the exchange which enforces the approach of this invention.
[Drawing 4] It is drawing explaining the configuration of the terminal unit which enforces the approach of this invention.
[Drawing 5] It is a functional block diagram when using the terminal unit of drawing 4 as a TV phone terminal unit.
[Drawing 6] It is flow drawing of the message sequence according to this invention.
[Drawing 7] It is flow drawing of the message sequence of the reservation channel release in this invention.
[Drawing 8] 64kbps(es) It is a call H0 It is flow drawing of the processing sequence changed to a call.
[Drawing 9] It is an example of a facility information-element edit format.
[Drawing 10] It is the example of a format of the offer operation in "a channel monitor demand" and "channel change good advice."
[Drawing 11] It is the example of a format of the offer operation in "a channel change demand", "advice of the completion of a channel change", and "a transmission-speed change demand."
[Drawing 12] It is the example of a format of the offer operation in "a different call transmission-speed change demand."
[Description of Notations]
100,200,300 ISDN exchange
150 350 Terminal
151 351 Switching control section
152 352 64kbps Multiplexing section
153 353 H channel multiplexing section
10,210 ISDN message analyzor
20,220 ISDN message editing section
30, the channel class modification section
31 Channel Class Modification Storage Section
40,250 Reservation dispatch control section
60,240 Channel change Monitoring Department
61 Channel Change Allowed Time Storage Section
70 Intact Channel Maintenance Monitoring Department
71 Intact Channel Maintenance Allowed Time Storage Section
110 B Channel Control Section
260 Terminal-Handling Analyzor
241 Management Department between Channel Change Demands

230 Channel Change Control Section
270 Channel Change Mode Storage Section
310 Terminal Status-Display Section
320 Advice Section of Terminal-Handling Information
280 Reservation Dispatch Mode Storage Section
290 Reservation Dispatch Information Storage Section
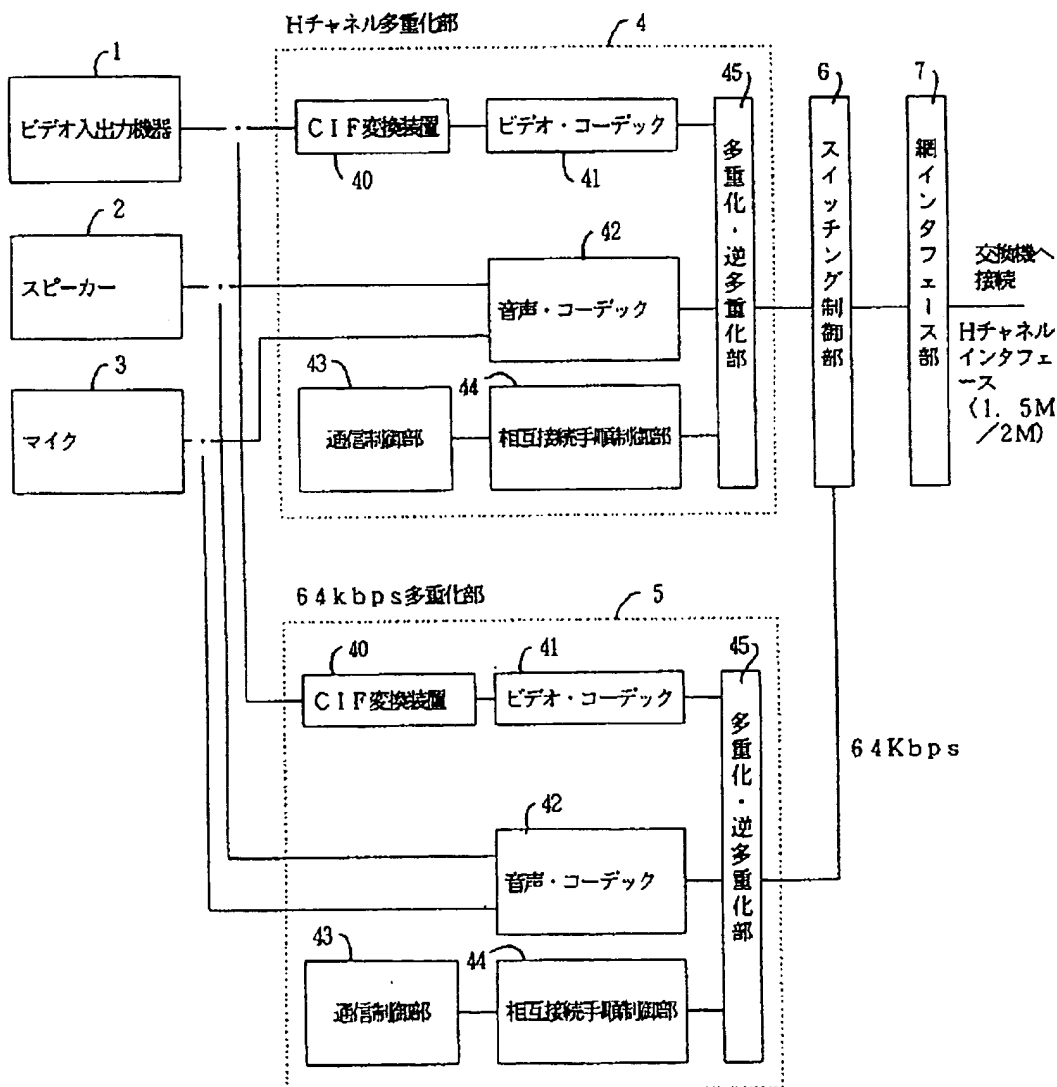
[Translation done.]

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DRAWINGS

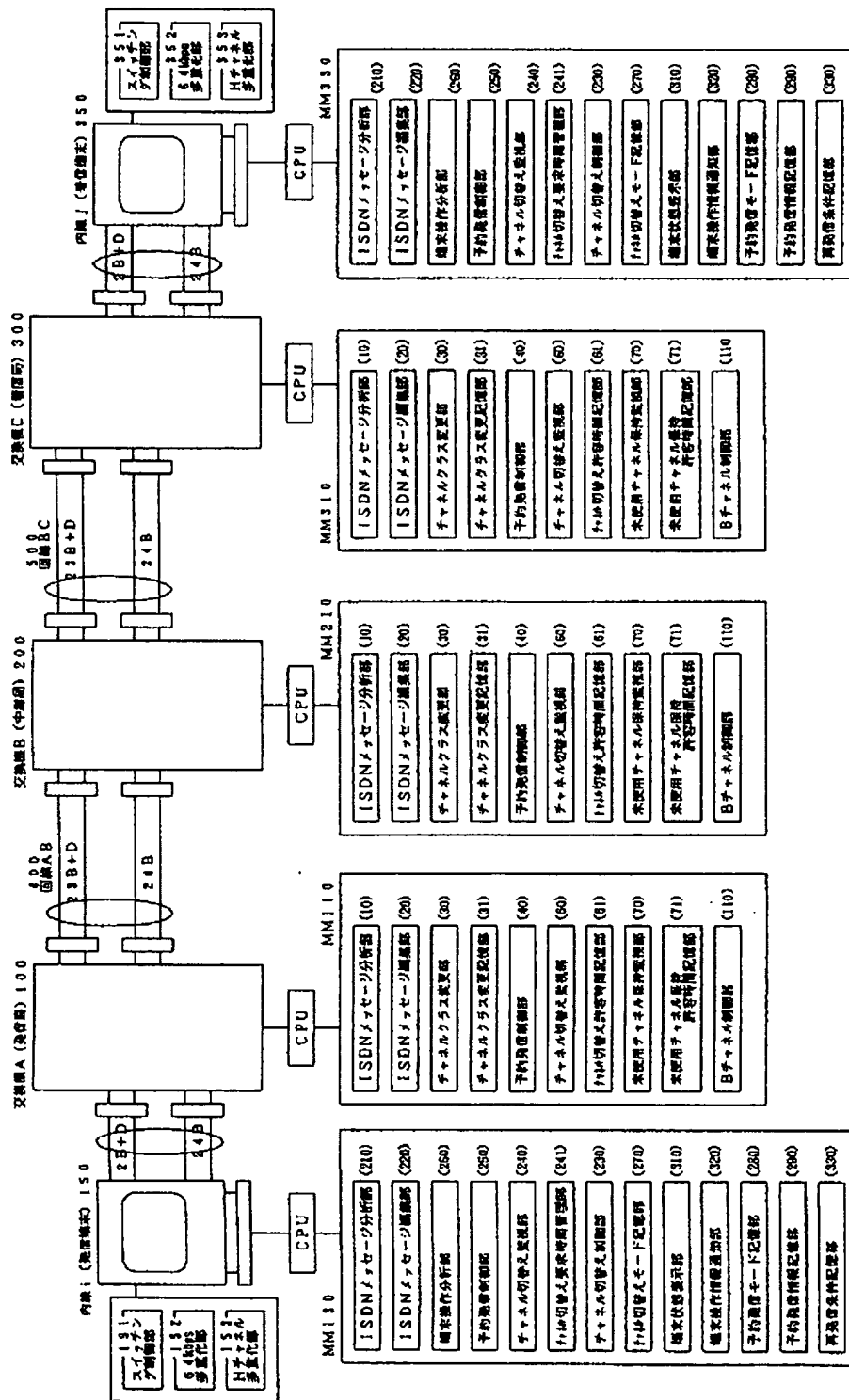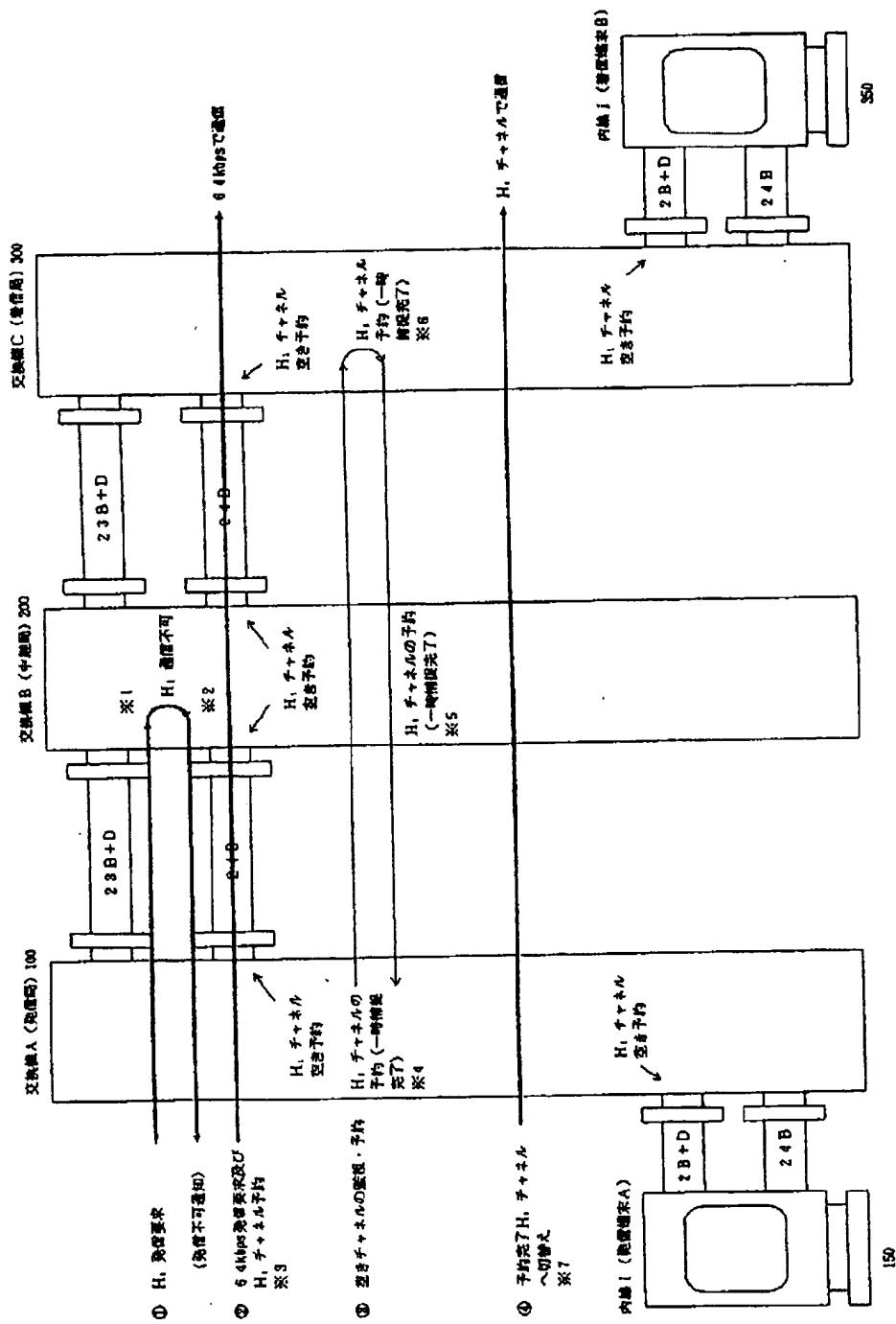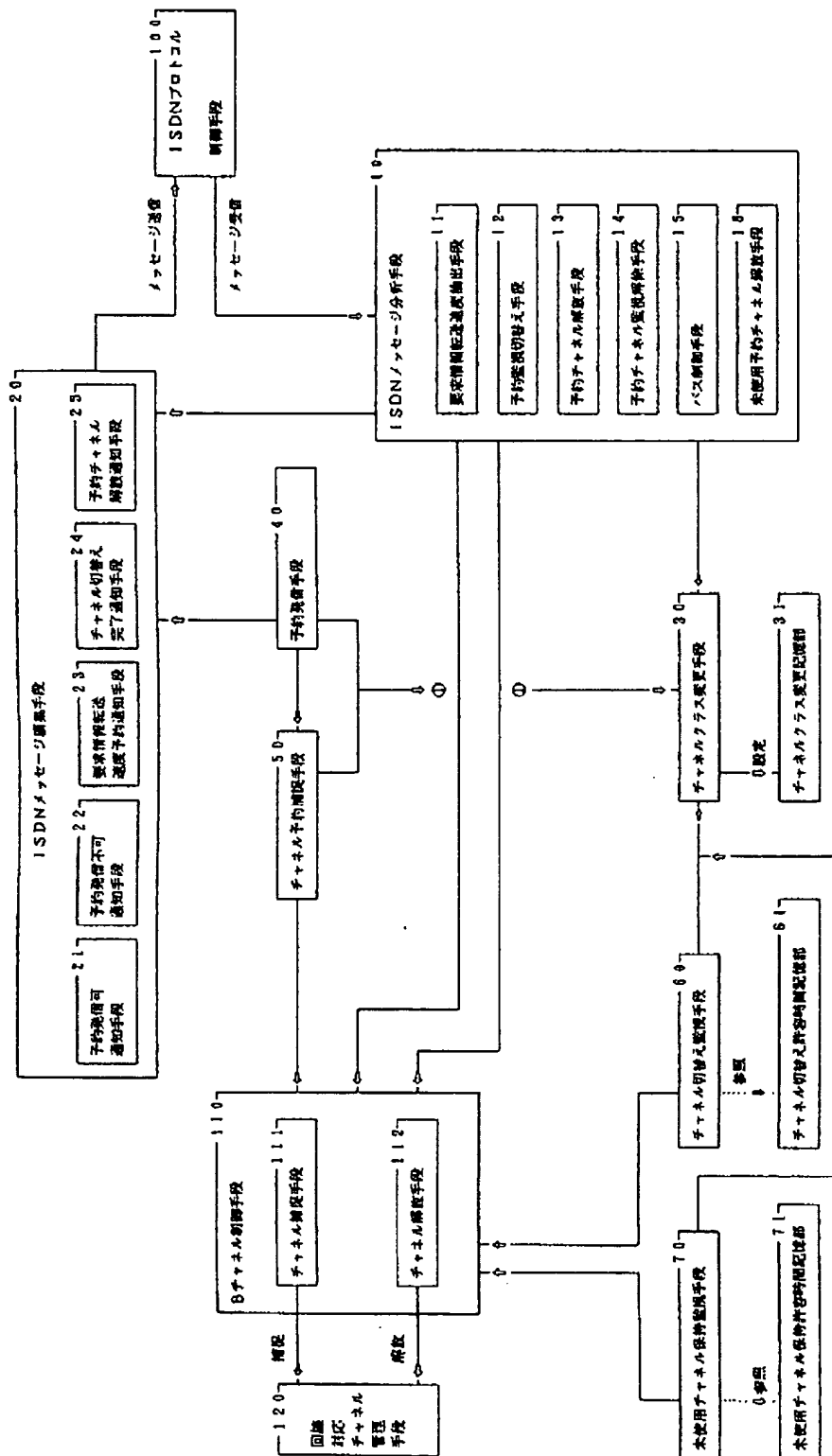[Drawing 5]

テレビ会議電話端末装置機能ブロック図

[Drawing 1]

本発明の実施例

[Drawing 2]

本発明の特徴を説明する図

[Drawing 3]

本発明方法を実施する端末装置の構成を説明する図
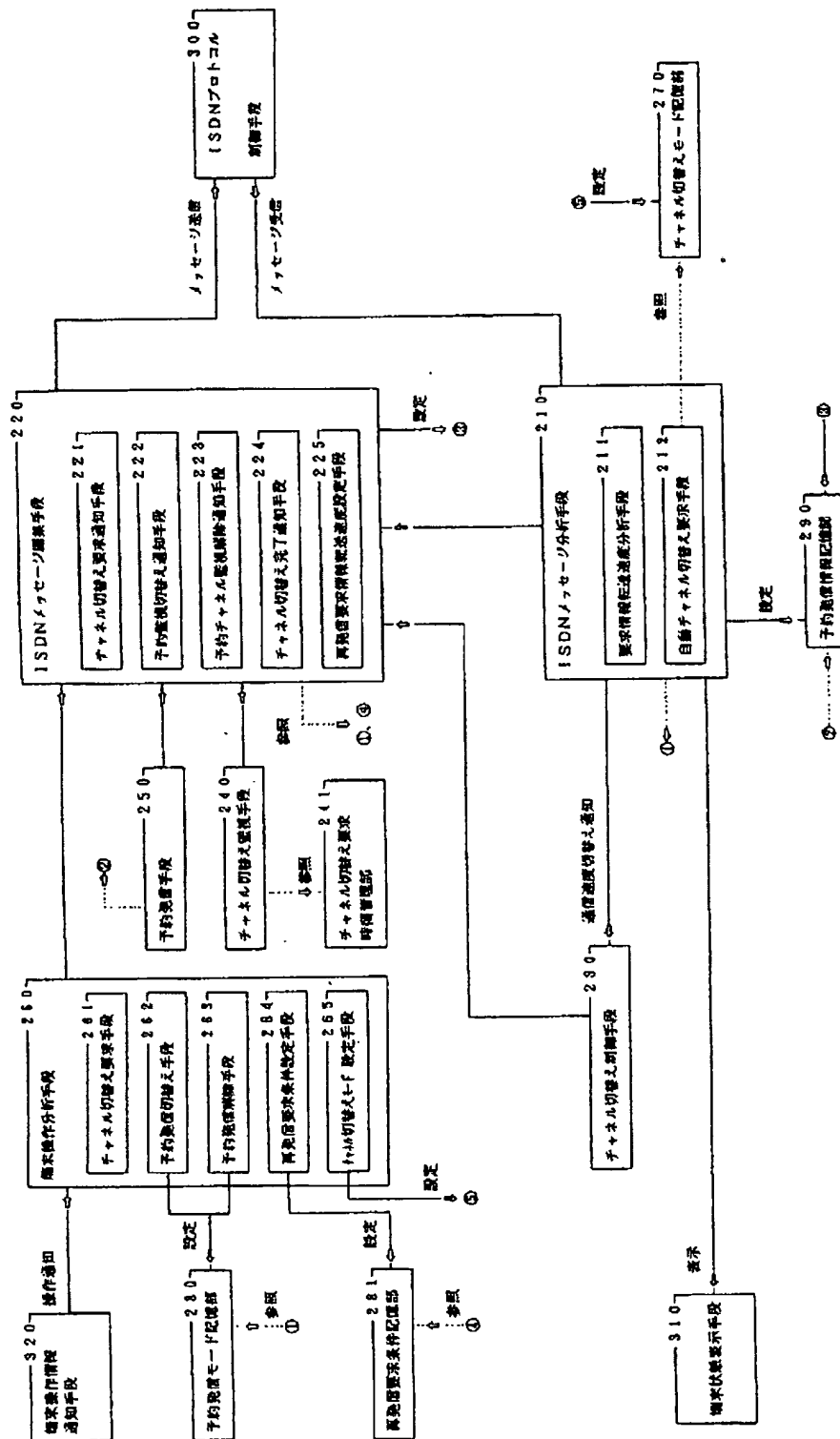
[Drawing 6]

本発明にしたがうメッセージシーケンス

発端末 1　　交換機A　　交換機B　　交換機C　　着端末 J

SETUP
S1
CALL_PROC
S2
　SETUP　　S3
　CALL_PROC
　S4
　DISC①　　▲チャネル閉塞不可
DISC①　S5
REL
S6　REL_COMP
SETUP②
S7
CALL_PROC
S8　SETUP②
　CALL_PROC　S9
　S10　SETUP②
　　CALL_PROC　S11
　　S12　SETUP②
　　　CALL_PROC
　　　CONN
　　CONN　S13
　CONN
CONN
64Kbps通信中

S14 FAC③　　★　FAC③　　⇒▲S15
FAC④
　　　　　FAC④　S16
FAC④
S17 FAC⑤　　★FAC⑤　　⇒★
FAC⑤
FAC⑤　S18
FAC⑥　S19
S20
FAC⑦
S21　◆FAC⑦　⇨◆FAC⑦　S22
　　　⇒◆S23
FAC⑧
FAC⑧　S24
FAC⑨
S26　FAC⑩　S25
FAC⑩
S27　FAC⑩　　FAC⑪ S29　FAC⑪　⇒S30
S28　　　　　　　　　FAC⑫　S31
FAC⑫
FAC⑬　　FAC⑫
S34　S33　　S32
内線 i と内線 j 間の同期確立
S35
H1通信中

[Drawing 7]

予約チャネル解放シーケンス
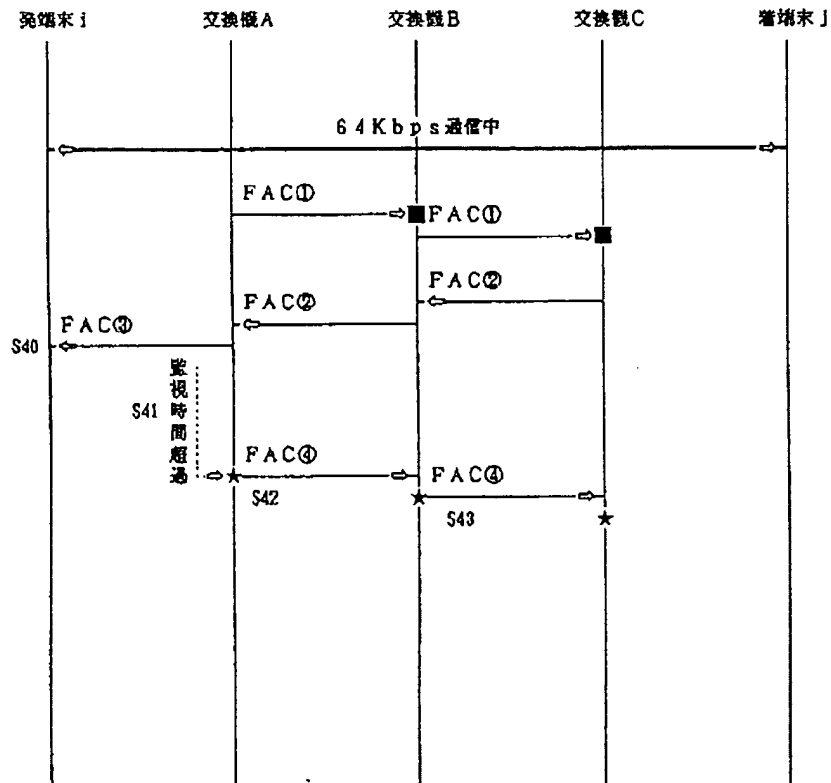
[Drawing 8]

６４ｋｂｐｓ 呼をＨ０ 呼に切り替える処理シーケンス

発端末ｉ　交換機Ａ　交換機Ｂ　交換機Ｃ　着端末Ｊ

６４Ｋｂｐｓ通信中（呼番号：ｘ）

SETUP①
CALL_PROC
SETUP①
CALL_PROC
SETUP①
CALL_PROC
SETUP①
CALL_PROC
CONN
CONN
CONN
CONN
CONN

Ｈ０通信中（呼番号：ｙ）

FAC② S50
★FAC② S51
★FAC② S52
★FAC② S53
FAC③ S54
FAC③ S55
FAC③ S56
FAC③ S57

Ｈ０通信によるテレビ会議開始 S58

DISC④
REL
REL_COMP
DISC④
REL
REL_COMP
DISC④
REL
REL_COMP
DISC④
REL
REL_COMP

６４Ｋｂｐｓ通信中呼の解放完了
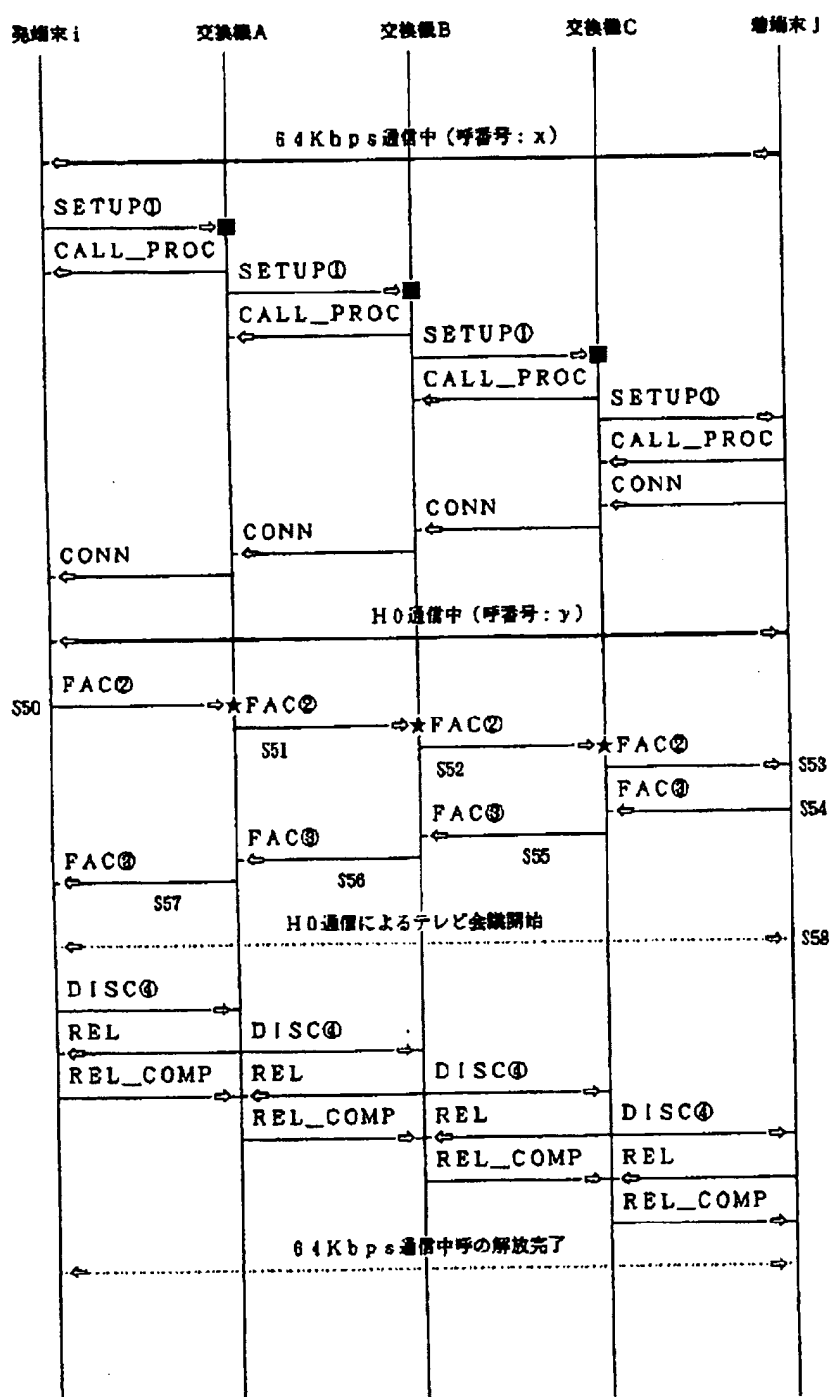
[Drawing 9]

ファシリティ情報要素編集フォーマット

8	7	6	5	4	3	2	1

8	7	6	5	4	3	2	1
ファシリティ情報要素番号								
内 容 長								
1 拡 張	0 予 備	0	サービスアプリケーション 1	1	1	1	1
1 クラス	0	1 形式	0	0	0	0	1
			コンポーネント種別タグ (インボーク)				
コンポーネント長								
0 クラス	0	0 形式	0	0	0	1	0
			コンポーネント 識別子タグ (インボーク 識別子)				
インボーク識別子長								
インボーク識別子								
0 クラス	0	0 形式	0	0	1	1	0
			オペレーションバリュータグ				
オペレーションバリュー長								
0	オペレーション							
注1) 提供オペレーション								
注2) アーギュメント								

[Drawing 10]

提供オペレーションが「チャネル監視要求」
「チャネル切り替え可通知」の場合

8	7	6	5	4	3	2	1
0 クラス 1	0 形式	0	0	0	0	0	
0	長さ						
~ Q931 伝達能力情報要素 ~							
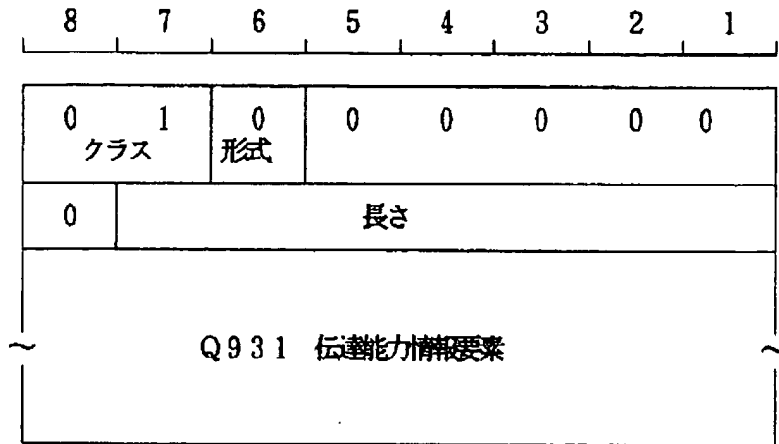
[Drawing 11]

提供オペレーションが「チャネル切り替え要求」
「チャネル切り替え完了通知」「通信速度切り替え要求」の場合

8	7	6	5	4	3	2	1
0 クラス 0	形式 1	1	0 S E T 0	0	1
0	長さ
0 クラス 1	形式 0	0	0	0	0	0
0	長さ
~ Q931 伝達能力情報要素 ~
~ Q931 チャネル識別子情報要素 ~
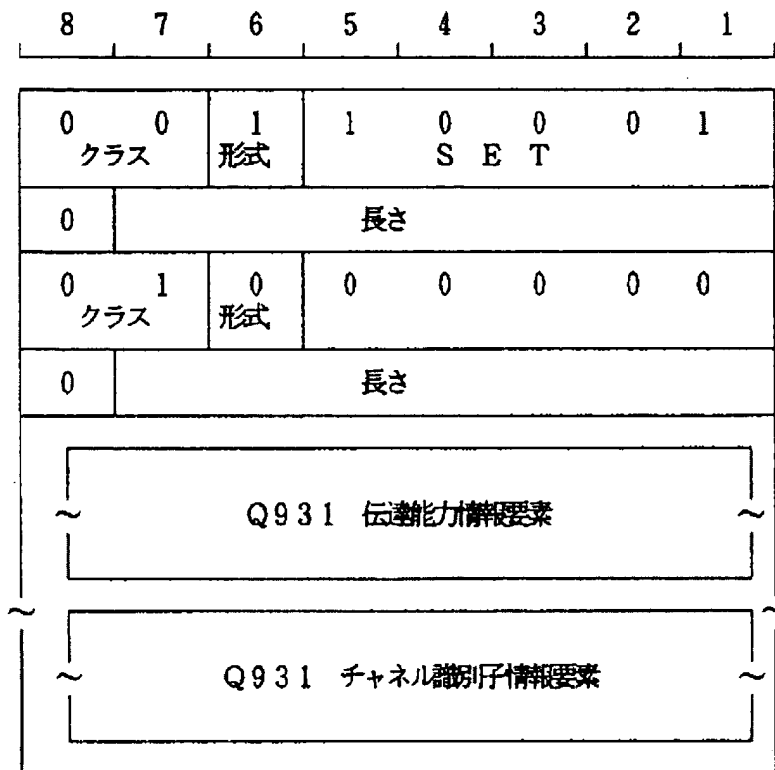
[Drawing 12]

提供オペレーションが「異呼通信速度切り替え要求」の場合

8	7	6	5	4	3	2	1

0　　　0 クラス	1 形式	1	0　　0 S E T	0	1
0	長さ				
1　　　0 クラス	0 形式	0	0　　0 切替え元呼番号	0	1
0	長さ				
呼番号長					
呼番号					
1　　　0 クラス	0 形式	0	0　　0 予約監視継続指示	1	0
0	長さ				
注3）　継続指示					

[Translation done.]